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# Annual Report

ON PRAIRIE FARM  
REHABILITATION &  
RELATED ACTIVITIES

SASKATCHEWAN

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PRINCE ALBERT

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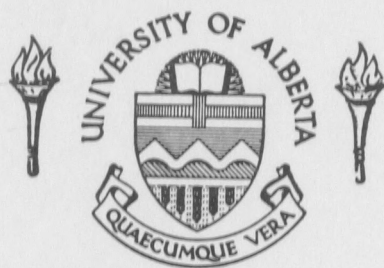
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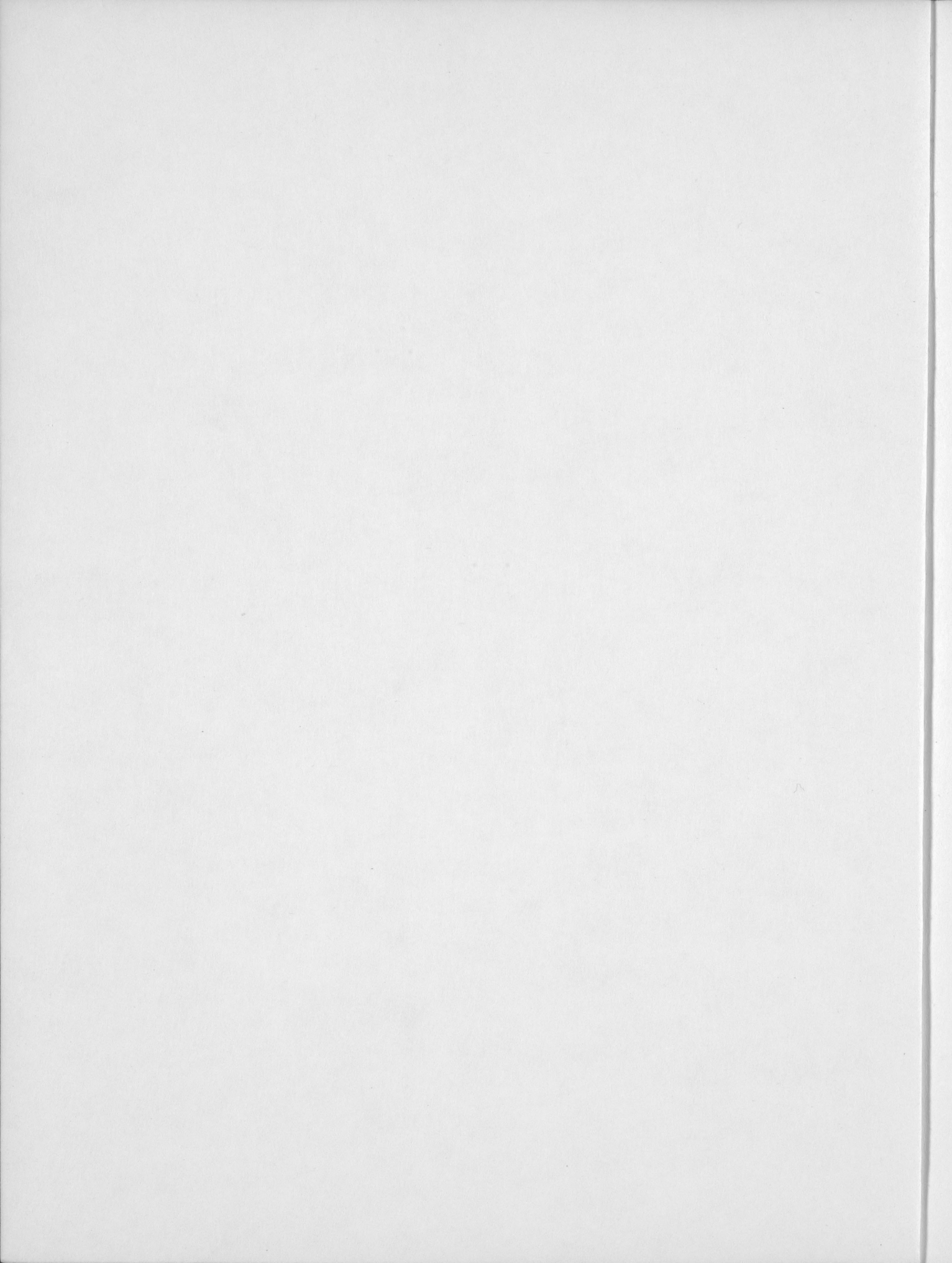
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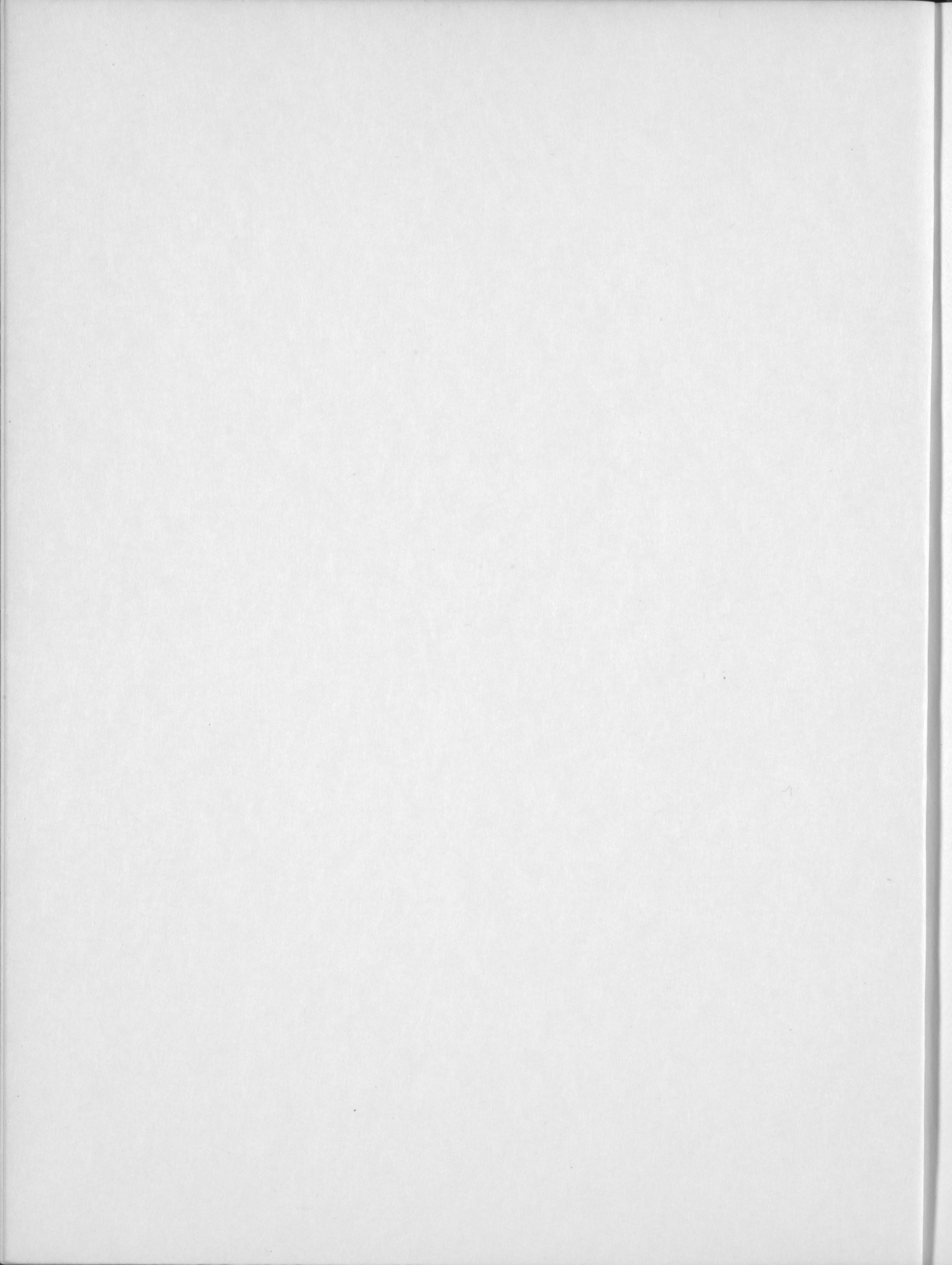














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GENERAL SCIENCES

Canada. Dept of agriculture

## PRAIRIE FARM REHABILITATION

## and RELATED ACTIVITIES

1957 - 1958



PRairie Farm Rehabilitation

and Related Activities

1957 - 1958

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## INTRODUCTION

The Prairie Farm Rehabilitation Act was passed during the 1935 session of Parliament to provide for "the rehabilitation of the drought and soil drifting areas in the Provinces of Manitoba, Saskatchewan and Alberta". The object of this Act was to deal with an immediate problem of prolonged drought which was then having a severe effect on agriculture in Western Canada. In addition to the promotion of new and improved cultural practices, provision was made for the development of the surface water resources, for stockwatering and domestic use and also for the production of feed and seed supplies through irrigation. In 1937 the Prairie Farm Rehabilitation Act was amended to include land utilization and land settlement as additional objectives. By further amendment in 1939 this Act was extended to remain in force indefinitely.

The P.F.R.A. program is designed to bring about desirable adjustments in agricultural practices which will assist in establishing a sound and progressive agricultural economy in Western Canada. This program has already been effective in developing increased stability and security through the diversification of agricultural production. The conservation of water both on individual farms and in rural communities and the promotion of better land utilization will help minimize the effect of drought should a period of dry years return to the prairies.

The area within which P.F.R.A. operates covers approximately 105 million acres. In this area lies some 47 million acres of improved farm land which is more than half the total improved acreage in Canada.

The administration has also been made responsible for several large irrigation and reclamation projects outside the boundaries of P.F.R.A. These projects too have had a beneficial effect on the national agricultural economy by bringing into production, lands which formerly were of limited agricultural value.

Although this report will deal principally with the work done by P.F.R.A. in 1957, it will also review in a general way, the progress of the various programs and projects promoted by P.F.R.A. since its inception in 1935.





## ADMINISTRATION AND ORGANIZATION

The Prairie Farm Rehabilitation Act is administered by a Director who is responsible to the Deputy Minister of Agriculture in Ottawa. The Director's office is located at Regina, Saskatchewan, where headquarters for the administration has been established. In addition to the Director's Office the organization at Regina consists of the Water Development Branch, the Community Pasture Branch, and the Engineering Services Branch.

The Director's Office co-ordinates the activities of the different Branches and administers the Resettlement and Rehabilitation program. The Construction, Equipment and Supply Division; Land Division; Planning and Information Division; and Administration Division are directly responsible to the Director.

The Water Development Branch supervises the development of an extensive program of farm and community water storage projects, and numerous small scale irrigation schemes.

The Community Pasture Branch undertakes the construction of new pastures and supervises the operation and maintenance of the existing Community Pastures throughout Saskatchewan and Manitoba.

The Engineering Services Branch, composed of the following Divisions - Hydrology, Soil Mechanics, Design, Air Photo Analysis and Engineering Geology, Surveys, and Drainage - performs all engineering services for the investigation, design, and construction of all projects under P.F.R.A. administration.

In addition to the Head Office in Regina, there are nineteen District and Regional Offices and nine Project Offices situated throughout the Western Provinces. From the Project Offices there is usually a further breakdown to Field Offices, the number depending upon the size and type of the project being administered by the Project Office.

Since P.F.R.A. activities are closely allied to those of certain Provincial Departments, every endeavour is made to co-operate with these agencies. Similarly the P.F.R.A. maintains a close liaison with other branches and departments of the Government of Canada, such as the Experimental Farms Service, Science Service, Economics Division and the Water Resources Branch of the Department of Northern Affairs and National Resources.



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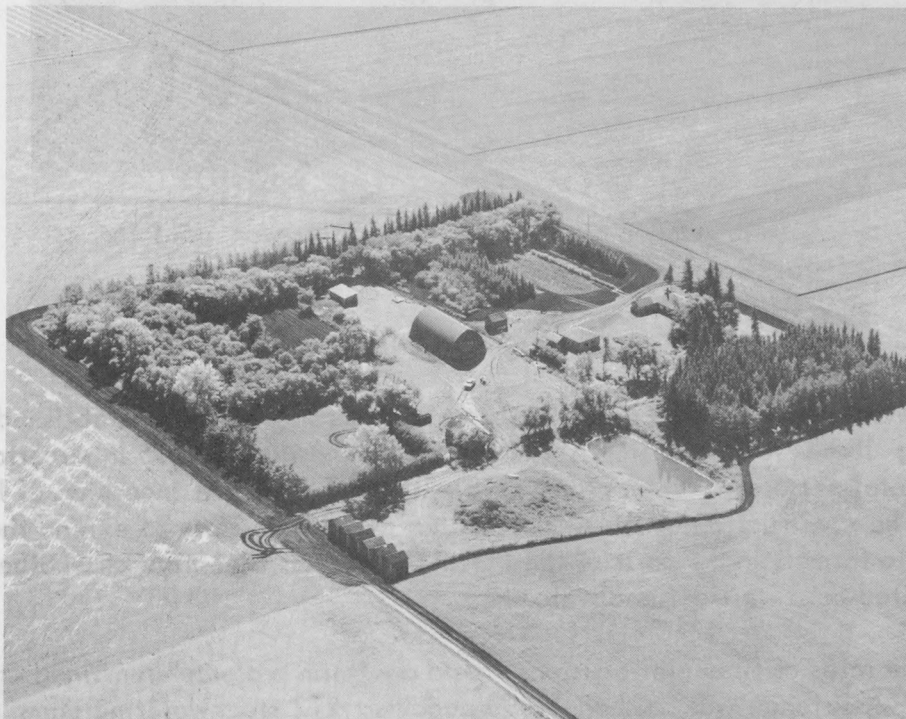
## WATER DEVELOPMENT PROGRAM

One of the primary objectives of the Prairie Farm Rehabilitation Act was to introduce a water conservation program which would provide greater security to the agricultural population of Western Canada. The Act made provision for engineering and financial assistance in the developing of water resources for use on farms and in rural communities. This policy was adopted to encourage the conservation and development of water resources in areas where shortages had been experienced, thereby assuring a dependable supply of water for domestic use, for stockwatering and for the production of livestock feed by irrigation.

The water conservation program is under the supervision of the Water Development Branch. The projects administered by this Branch may be classified either as "farm projects", which include individual and neighbor projects, or "community projects", which include small community and large community types of development.

### Farm Projects

Direct financial assistance is available through P.F.R.A. to help individual or neighboring farmers in the conservation and storage of water on their farms by the construction of dugouts, dams or dykes. In addition, all engineering services are provided free



A farmstead in southeastern Saskatchewan where the water requirements are supplied by a well located dugout.

Ref. # 13890



of charge. The responsibility for actual construction, however, remains with the individual or neighboring farmers who make application for assistance with the project.

The 1957 season was marked by a light runoff in the greater part of the P.F.R.A. area. This was followed by a season of generally light and irregular rainfall. As a result of these conditions, there was a large increase in the number of projects, particularly dugouts, constructed in 1957. (See Appendices I and II)



A farm dam in southwestern Saskatchewan used for stockwatering and small scale irrigation.

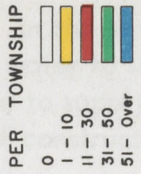
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Twenty-five hundred and fifty-nine "farm projects" were established during the past year; 186 were in Manitoba, 1478 in Saskatchewan and 895 in Alberta. These brought the total number of "farm projects" constructed since the inception of P.F.R.A. to 56,094. The construction of these projects has made it possible to extend the benefits of water to farmers in all parts of the P.F.R.A. area irrespective of whether or not they are located on a well defined watershed.

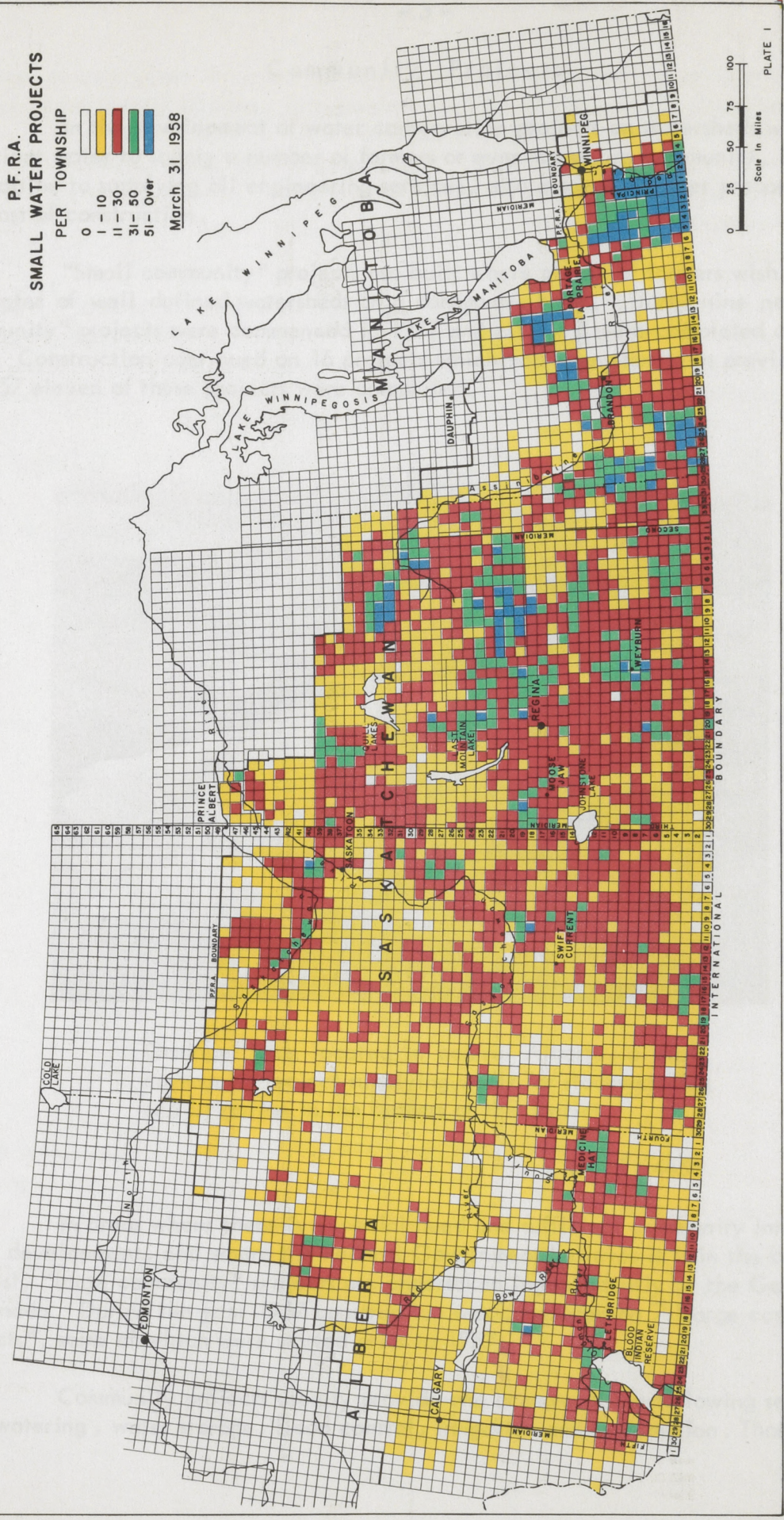
The rates of financial assistance paid on "farm projects" remained unchanged during 1957. Assistance was paid on 2,198 dugouts, 212 stockwatering dams and 149 small irrigation projects; the average paid was \$109.87 on dugouts, \$97.26 on stockwatering dams and \$234.56 on irrigation projects, compared to a long-term average of \$107.55, \$88.15 and \$234.21 respectively. These payments in most cases represented one-quarter to one-third of the total cost of construction of farm projects.



P.F.R.A.  
SMALL WATER PROJECTS  
PER TOWNSHIP



March 31 1958







## Community Projects

In the development of water conservation projects on watersheds which have sufficient water to supply a number of farmers or even an entire community, P.F.R.A. in addition to supplying all engineering services, also assumes a larger proportion of the cost of construction.

"Small community" projects are built where groups of farmers wish to utilize the water of well defined watersheds on a community basis. Thirty-nine new "small community" projects were commenced in 1957 and all but 5 were completed during the year. Construction continued on 16 projects which had been started in previous years. In 1957 eleven of these projects were completed.



Grainger Dam located in central Alberta, a small community project supplying water for stockwatering and irrigation to the farmers of the district.

Ref. # 14454

In areas where there is a special need and sufficient community interest in water development, and where the Federal Government believes it is in the best public interest, "large community" projects are undertaken independently by the Government of Canada. During the year 1957 construction was completed on 7 "large community projects", some of which were started prior to 1957.

Community projects usually provide one or more of the following services: - stockwatering, water storage, flood control, irrigation and reclamation. Those serving



several purposes are termed multiple-purpose projects; others are designated according to their principal function. Of the 45 "small community" projects completed in 1957-58, 18 were stockwatering dams and dugouts, 22 were multiple-purpose reservoirs, 5 were flood irrigation and reclamation projects. With regard to the "large community" projects completed in 1957-58, the following is an outline of each, indicating the type of project, its location, purpose and use.

#### Lafleche Dam

As a part of the development of the Wood Mountain watershed, a dam has been built on the Wood River between the towns of Lafleche and Gravelbourg to provide water for irrigation and stockwatering. The reservoir will store 30,000 acre feet of water, potentially available for the irrigation of about 15,000 acres of land between Lafleche and Johnston Lake.

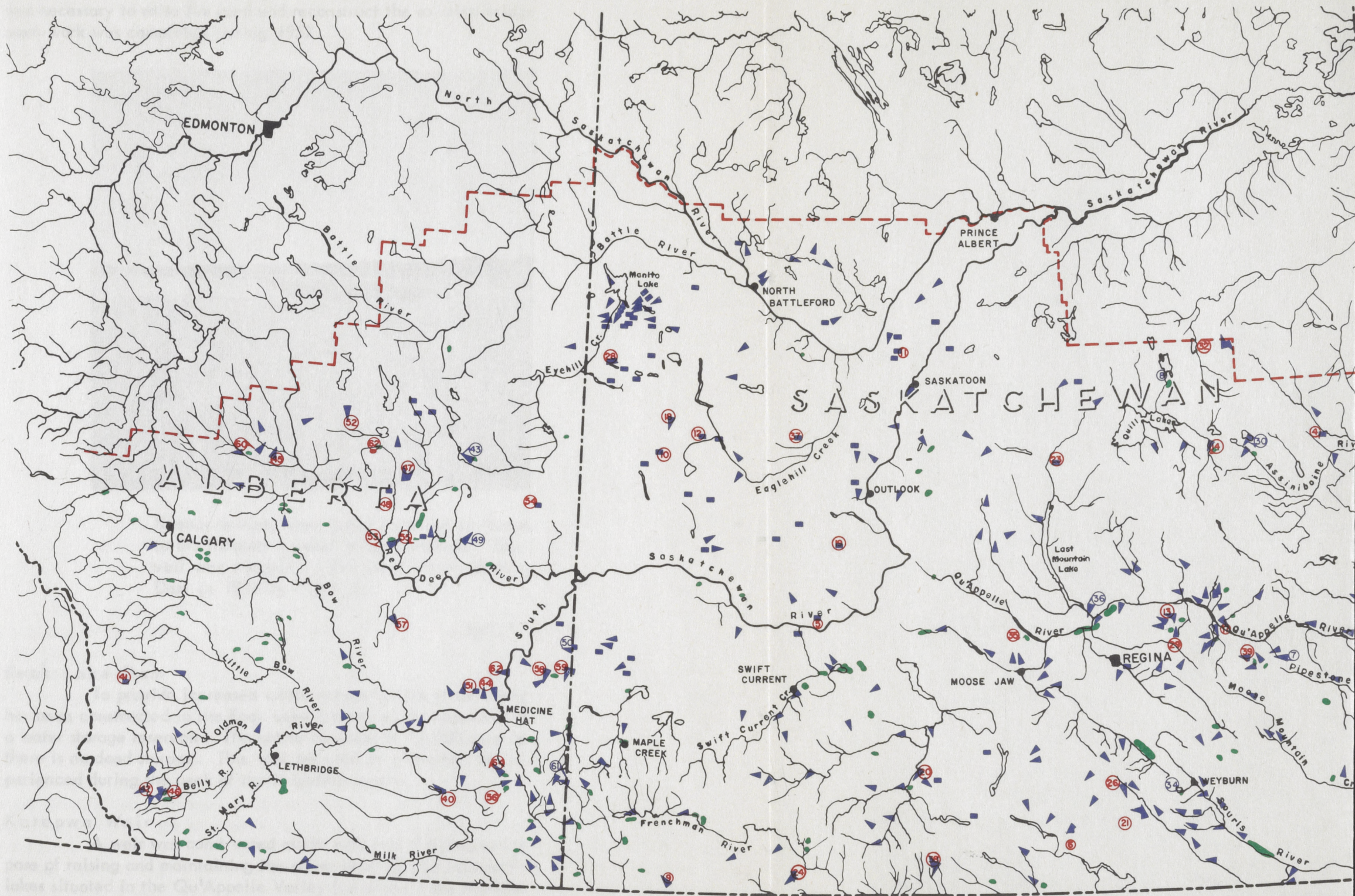


Lafleche Dam, a large community project with a storage capacity of over 300,000 acre feet of water located in central southern Saskatchewan.

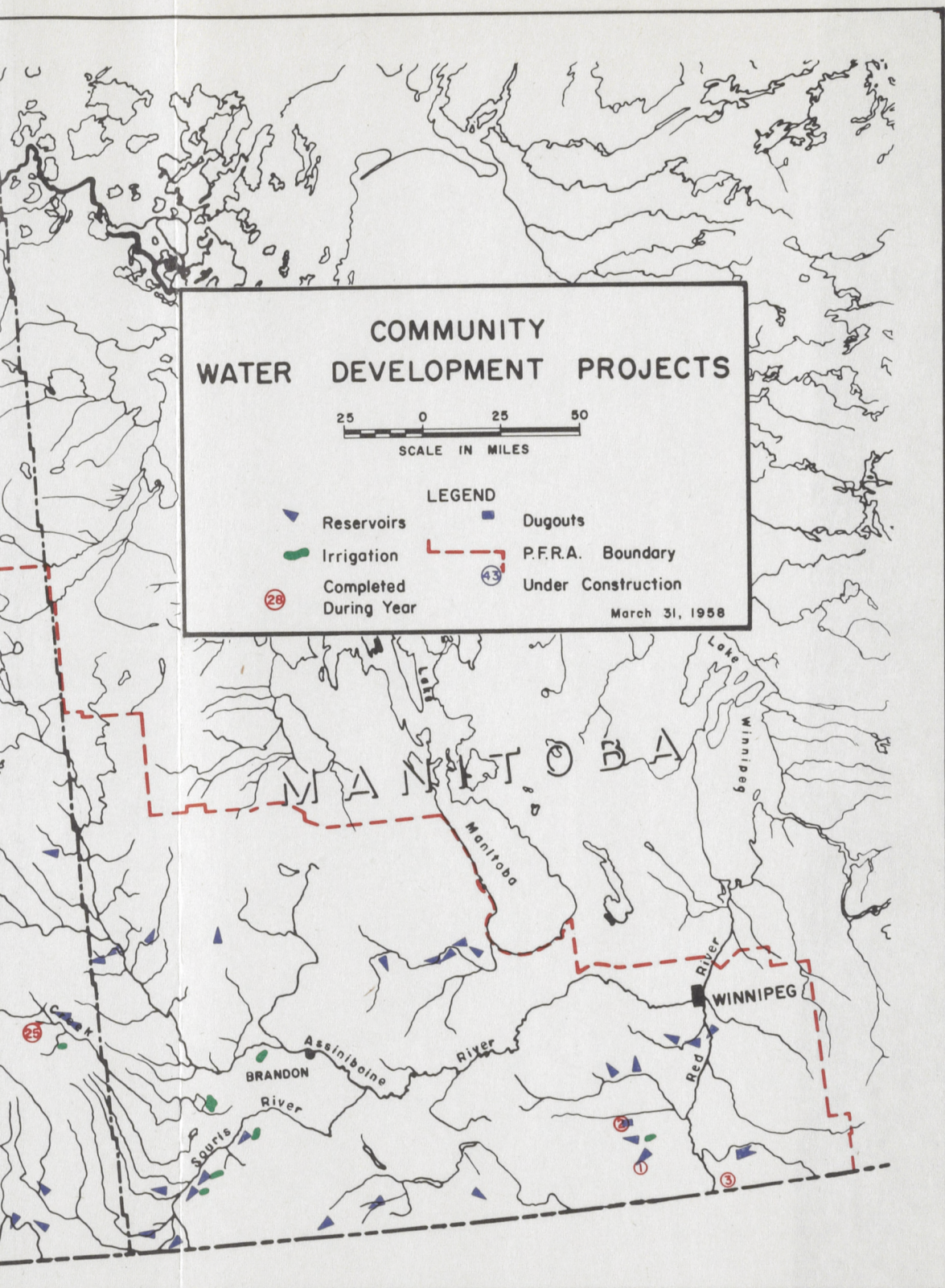
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The water stored by the Lafleche reservoir will also be used as a domestic water supply for community centres in the surrounding area. Construction was completed during 1957 and the reservoir was first filled in the spring of 1958.









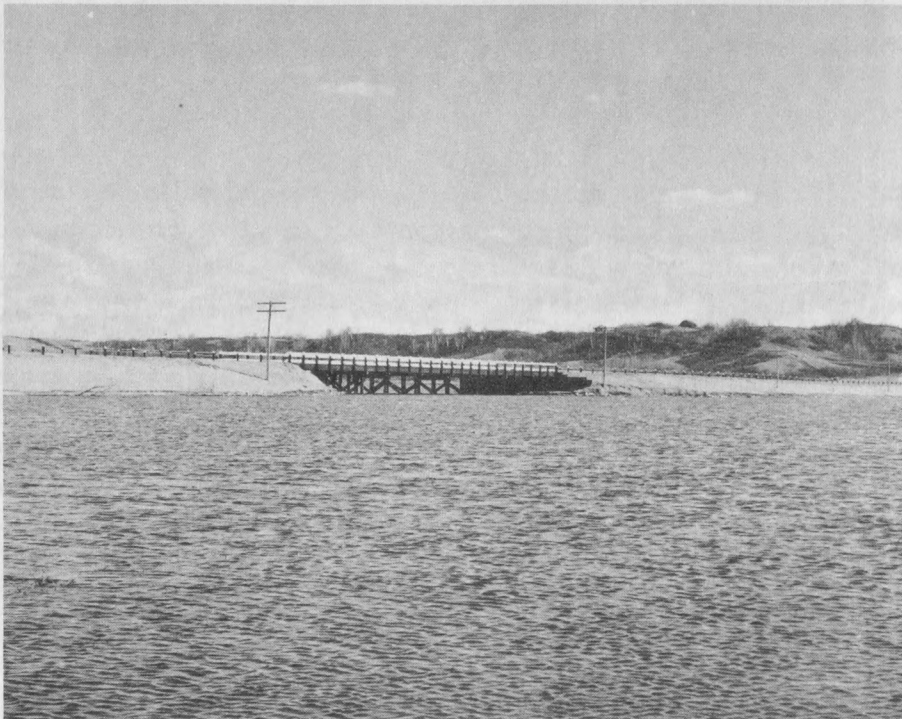






### Moosomin Dam - Keenan Bridge

This dam on the Pipestone Creek south of Moosomin, was completed in 1954 but as a result of serious flooding of a municipal road associated with the reservoir, it was necessary to raise the road and reconstruct the existing bridge. This project improvement work was completed during 1957.



Keenan Bridge, over Pipestone Creek at its entrance to the Moosomin water storage reservoir. This reservoir was created by the construction of Moosomin Dam in 1954 by P.F.R.A.

Ref. # 15360

### Rock Lake Dam

To provide increased water storage for the Eastern Irrigation District, a dam has been constructed in the Rock Lake Coulee which converted this drainage basin into a water storage reservoir. The entire capacity of 11,000 acre feet of water is usable as there is no dead storage. This will be used to alleviate the water supply problem experienced during the peak of the irrigation season.

### Katepwa Weir

A weir was constructed at the east end of Katepwa Lake in 1888 for the purpose of raising and maintaining the water level of that lake and also of the three other lakes situated in the Qu'Appelle Valley just above Lake Katepwa. Although repaired and rebuilt several times, it became apparent that it was necessary to replace this weir with a larger and more efficient structure. The new weir has the same crest elevation as previously, but has greater length of crest and a larger control structure located lower in

the weir to provide a greater measure of safety should flood conditions appear imminent. This weir was constructed during the fall and winter of 1957-58 with construction being completed in January.



Katepwa Weir just after the construction was completed early in 1958. This weir will ensure more accurate control of the water level in the Fishing Lakes of the Qu'Appelle Valley.

Ref. # 15070

#### Dominion City Dam (Roseau River)

A dam constructed on the Roseau River east of Dominion City will regulate the flow of the river and will provide water for stockwatering during dry periods. The dam will raise the river level about 6 feet. The water storage created by this dam will be used for a domestic water supply for the Village of Dominion City. In an area where there is no other satisfactory water supply, it is estimated that 105 people will benefit directly and 700 indirectly, by this project.

#### Larsen Dam (Radville)

The Larsen Dam constructed as a combination stockwatering and water storage dam on a coulee leading into Long Creek about one mile north of the town of Radville, has a storage capacity of 500 acre feet. The water from this dam can be released down Long Creek and will benefit 50-60 farmers by relieving critical water supply problems during dry periods. It will also be used as a source of domestic water supply for the town of Radville.



### Little Manitou Lake - Diversion Canal

An open canal 7 miles in length has been constructed to divert the flood waters of Lanigan Creek through Fresh Water Lake, into Little Manitou Lake north of Watrous. This will provide some measure of flood control in Last Mountain Lake area and will assist in restoring and maintaining the level of Little Manitou Lake.

The following two "large community" projects were under construction on March 31, 1958: -

### Brownhill Dam

This water conservation project located on a coulee about 1-1/2 miles southwest of Grenfell, Saskatchewan, will have a storage capacity of 275 acre feet. Because of limited drainage area tributary to the dam, a controlled diversion ditch from Pipestone Creek 2-1/2 miles south of the site will divert flood flows from this creek to the reservoir. In addition to the storage of water for stockwatering and flood control, this reservoir will also be used as a source of domestic water supply for the Town of Grenfell.

### Valeport Dyke

The Valeport Dyke which was constructed in the early 1940s, was breached in 1948 to relieve flooding conditions at Lumsden. Re-construction of this dyke was begun late in 1957. The dyke will benefit approximately 1500 acres of hay flats and market gardens below Last Mountain Lake which have been subject to frequent flooding.

## Special Services

Work was continued on a number of special services originated in former years. During 1957, approximately 30,000 cuttings and seedlings were planted for reservoir protection and to establish snow traps.

In co-operation with the Experimental Farms Service, a program of investigating "evaporation control" on farm ponds was originated in Southern Alberta. Two plywood tanks located at Vauxhall and Manyberries were used to test the value of cetyl alcohol in reducing surface evaporation. Limited tests with cetyl alcohol were made on farm dugouts. Results indicated that investigations should be continued.

Contact and liaison was maintained with Ionics Incorporated of Cambridge, Mass., U.S.A. manufacturers of electric membrane demineralizers. It was hoped that a unit might be developed to serve individual or small communities whose available water supply is highly mineralized. Some progress was indicated during 1957 with the announcement by Ionics that it was commencing the manufacture of a unit which would be suitable for this purpose.

# Technical Assistance

In addition to financial assistance referred to in the previous sections the following free field services were provided by the Water Development Branch in 1957-58: -

	Agricultural Services	Engineering Services
Dugouts		
Preliminary calls	1,137	
Final inspections	2,028	
Miscellaneous inspections	425	
Stockwatering Dams		
Preliminary calls	285	
Final inspections	91	187
Miscellaneous inspections	161	773
Surveys completed	-	264
Plans prepared	-	254
Small Irrigation Projects		
Preliminary calls	442	-
Final inspections	75	126
Miscellaneous inspections	314	704
Surveys completed	-	163
Plans prepared	-	144
Community Projects		
Preliminary calls	184	-
Final inspections	41	-
Miscellaneous inspections	507	-
Projects investigated	-	218
Projects built	-	82
Surveys and plans prepared	-	69
Maintenance	-	79
Sub Totals	5,690	3,063
TOTAL		<u>8,753</u>



## COMMUNITY PASTURE PROGRAM

The work of the Community Pasture Branch commenced in 1937, following an amendment to the Prairie Farm Rehabilitation Act which broadened the scope of the Act to include land utilization and resettlement. Over the years this policy change has had a far-reaching effect on the type and stability of agricultural production throughout Western Canada.

By agreement with the Provinces of Saskatchewan and Manitoba, sub-marginal areas are leased to the Federal Government which agrees to finance the construction, maintenance, and improvement of pasture facilities in these areas. It is the responsibility of the provinces concerned to select the area to be developed and obtain control of the land. Under the P.F.R.A. Community Pasture program, many large areas of land proven unsuitable for cereal crop production have been regrassed and are now being used for livestock production.



A general view of the Kindersley Community Pasture headquarters showing the development of the grounds.

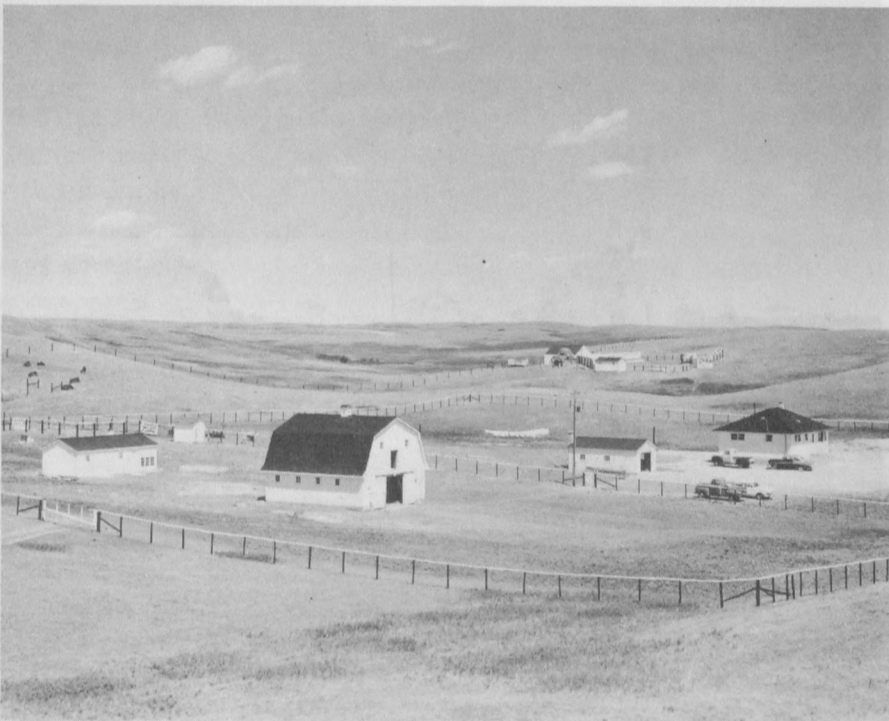
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Families located within the proposed pasture areas are given assistance to move to better land in the same or a neighboring municipality where they may derive a better living from farming and where they are in a position to take advantage of the pasture facilities. If land is not available in these areas, these farmers are assisted in moving to irrigation projects built by P.F.R.A. for resettlement purposes.

Since the inception of the Community Pasture program in 1937, a total of 1,796,275 acres of land have been developed for pasture use. Operated as 61 separate pasture units, this land provided spring, summer, and fall grazing for 119,398 units of livestock belonging to 5,763 patrons during 1957. Details regarding acreage, construction and operating costs, and the numbers of livestock pastured on individual pastures, will be found in Appendices IV and V of this report.

### Pasture Operations

The grazing season extended from the last week in April to the end of October. Conditions in the pastures during the 1957 season were generally good. The dry weather experienced to the end of June and again in the fall had an adverse effect on grazing and grass carry-over in some pastures. The water supply was fairly satisfactory even though during the last two months, the water was very low in some of the dams and dugouts. These were cleaned out and the smaller ones enlarged to improve future water supplies.



Headquarters of the new Fairview Community Pasture in west-central Saskatchewan. This pasture completed its first year of operation in 1957-58.

Ref. # 15772

### Pasture Services

As the cattle population per farm increases, the demand for summer pasturage continues to increase. This has created a problem for the various local Advisory Committees in allocating pasture privileges. In some pastures, to avoid over-grazing, it has been



# COMMUNITY PASTURES

## PRAIRIE FARM REHABILITATION ACT

AREA ENCLOSED IN 62 PASTURE UNITS

SASKATCHEWAN 1,648,125 ACRES

MANITOBA 155,760 ACRES

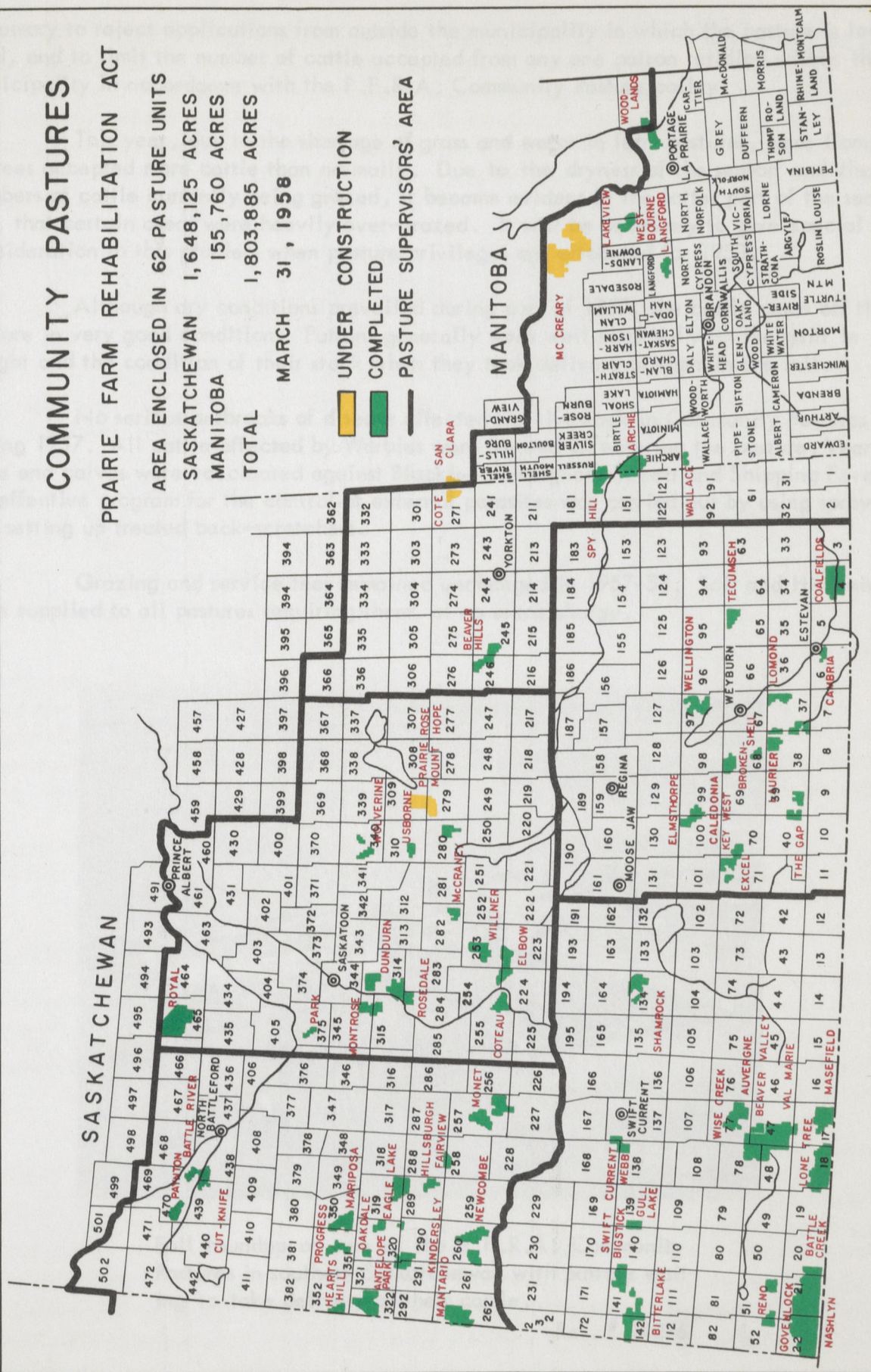
TOTAL 1,803,885 ACRES

MARCH 31, 1958

UNDER CONSTRUCTION

COMPLETED

PASTURE SUPERVISORS' AREA





# СЭВУТСАГ ҮТИУММОС

ТДА: МОЛТАЛЖИВАННЕР ИБАТ ЭМРАП

ЭТИУ ЭМУЛСАГ 29 И ОШОУДНЭ АЭМА

23804 251,848,1 ГАНВЕНТЖАКЭЭ

23804 087,281 АБОУННЭМ

23804 886,608,1 АЭЛТЭ

8281, 16 АСРАД

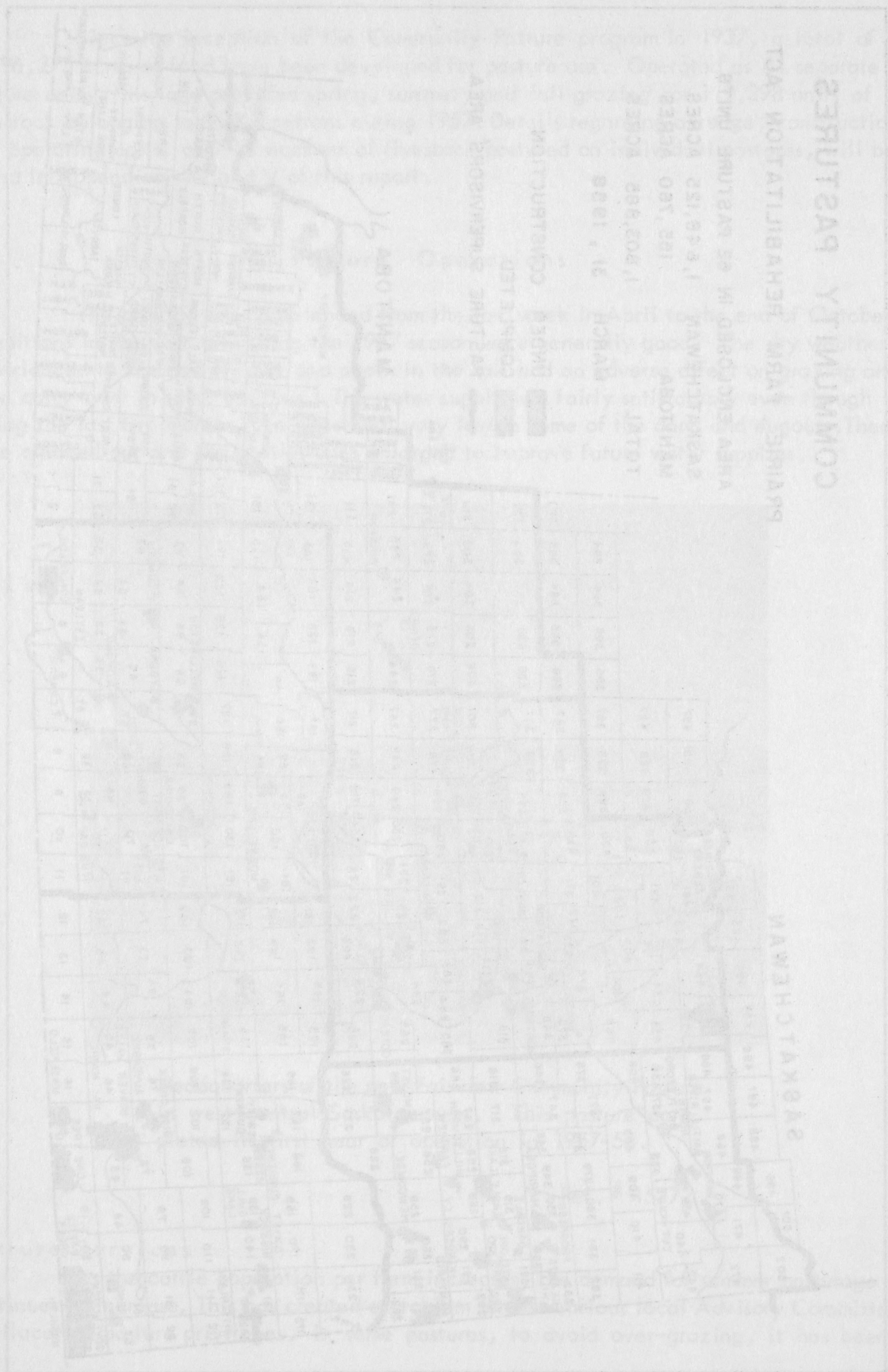
МОЛТУРТАСКО ЭЗОНД

ЭТЭЛЭММОС

АЭМА ЭШОУВЭННЭ ЭМУЛСАГ

АЭОТЭММ

МАВЕНТАНЭС





necessary to reject applications from outside the municipality in which the pasture is located, and to limit the number of cattle accepted from any one patron residing within the municipality in accordance with the P.F.R.A. Community Pasture policy.

This year, due to the shortage of grass and water in farm pastures, some Committees accepted more cattle than normally. Due to the dryness of the season and the numbers of cattle currently being grazed, it became evident in the latter part of the season, that certain areas were heavily over-grazed. It will be necessary to give special consideration to this problem when pasture privileges are allocated for 1958.

Although dry conditions prevailed during part of 1957, the cattle came off the pasture in very good condition. Patrons generally were well satisfied with the gain in weight and the condition of their stock when they took delivery of them in the fall.

No serious outbreaks of disease affected the livestock in Community Pastures during 1957. All cattle affected by Warbles were treated on entering the pasture. Yearlings and calves were vaccinated against Blackleg, Malignant Edema and Shipping Fever. An effective program for the control of external parasites was carried out by using sprays and setting up treated back-scratchers.

Grazing and service fees remained unchanged in 1957-58. Salt and Hi-Amine were supplied to all pastures requiring them, at no extra charge.



Fall roundup on one of the P.F.R.A. Community Pastures in southern Saskatchewan with patrons waiting to take delivery of their cattle.

Ref. # 14276

The following is a schedule of pasture fees and service charges in effect during 1957-58: -

#### Grazing Rates

Cattle per month	0.75
Horses per month	1.00
Sheep per month	0.10
Cows (breeding service)	3.00
Colts born in pasture, flat rate	3.00 per season
Calves born in pasture, flat rate	2.00 per season
A minimum grazing charge equivalent to three months' fees will be levied against any animal recorded for pasturage.	

#### Rates for Vaccine and Sundry Services

Blackleg, Hemorrhagic and Mixed Vaccine	0.15 per single dose
Dehorning	0.50 per head
Warbles & Horn Fly Spraying (treatment at corral)	0.15 per head
Mineral Supplement	0.35 per head
Castration - Cattle under six months	1.00 per head
Cattle six months and over	2.00 per head
Encephalomyelitis and Special Vaccines	At cost

#### Fires and Fire Protection

Several grass fires mainly caused by lightning occurred during the year. The material damage experienced was light although a considerable acreage of grass was burnt off in different pastures. The assistance received from local fire fighting units helped keep the damage experienced to a minimum. To assist in controlling and to prevent the spread of fires, several hundred miles of fireguards were maintained by the use of motorized graders.

All buildings are equipped with approved fire extinguishers and are inspected periodically for fire hazards. No pasture buildings were destroyed by fire during the fiscal year.

#### Hay and Grass Seed

A total of 3,258 tons of hay were harvested in Community Pastures. This hay is used for feeding the pasture bulls and saddle horses.

Approximately 9,000 lbs. of Crested Wheat Grass seed and 37,000 lbs. of June Grass seed were harvested in 1957 from the Gull Lake and Lakeview Community Pastures respectively.

#### Regrassing

During the 1957 season, 3,712 acres were regressed in 19 Community Pastures. This was made up of 630 acres of Crested Wheat Grass, 1,041 acres of Brome and Crested Wheat Grass and 2,046 acres of mixed grasses.

#### Breeding Services

As a requested service by pasture patrons, P.F.R.A. maintains a sufficient number of purebred bulls to provide adequate breeding service. The breed of bulls is based



on the majority vote of the patrons. In 1957 seven hundred and twenty-six bulls owned by P.F.R.A. and 202 bulls rented from pasture patrons, making a total of 928 bulls, were used in the breeding service. An estimated 90% calf crop resulted from 24,748 cows serviced. During the year P.F.R.A. purchased 23 mature bulls, 64 yearling bulls and 90 bull calves. The yearlings and calves are being developed at the Archie, Outlook and Bitter Lake Stations. One hundred and forty-two bulls unfit for breeding service were sold and 24 died from various causes during 1957-58.



A few of the bulls made available by P.F.R.A. for use in Community Pastures.

Ref. # 15862

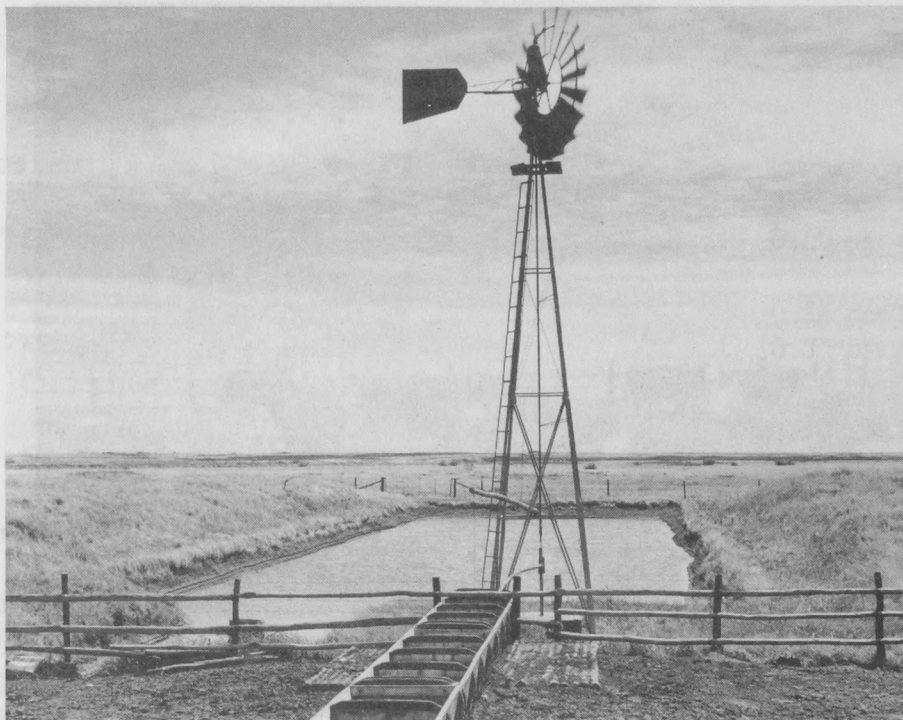
### Livestock Insurance

To offset losses by death which are inevitable in livestock production, a policy of livestock insurance is carried in the majority of Community Pastures. The total losses from all causes in 1957 were 631 cattle and 2 horses, which represents only about 1/2 of 1 percent of the livestock handled.

### Pasture Construction

For the purpose of maintaining and extending pasture facilities nine construction crews were employed by P.F.R.A. during 1957-58. In addition to the pastures in operation, construction work was done on 3 new pastures; - the Mount Hope-Prairie Rose pasture in central Saskatchewan at Semans, the McCreary pasture in the Riding Mountain area of Manitoba, and the Cote-San Clara pasture on the Manitoba-Saskatchewan boundary north of Togo, Saskatchewan. A total of 36,705 acres was added to the over-all acreage in 1957.

Throughout the construction season, two water development crews carried out an extensive maintenance program on domestic and stockwatering facilities in the various pastures. The new construction involved the erection of 28 windmills, the excavating of 6 dugouts and 1 combination dam and dugout, and the boring of 24 wells, of which 14 produced good supplies of water. The community pasture construction crews also fenced the canal right-of-way on the Buffalo Pound Lake project as well as some special fence construction in the resettlement area of Hays in Alberta.



A windmill used for pumping water for range cattle. Where this is feasible the usefulness of a dugout is extended and contamination of the water is reduced.

Ref. # 15784

Following is a table showing the new construction and repair work completed during 1957-58: -

Particulars	Projects Completed in 1957	Repair Work Completed in 1957	Total to March 31, 1958
Fencing (miles)	120-1/2	145-1/2	4307
Corrals	4	8	160
Pasture Managers' Dwellings	4	4	55
Riders' Cabins	2	5	33
Barns	4	-	55
Garages	5	-	55
Bull Sheds	6	-	47
Others (Granaries, Oil Sheds, Chicken Houses, Pump Houses)	9	1	158



## Pasture Improvement

Lands turned over to P.F.R.A. to be developed into Community Pastures are usually composed of either overgrazed pasture land and/or tracts of abandoned cultivated land in a weedy and drifted condition. In addition, from a standpoint of pasturage, the areas are inadequately supplied with water. Development of these areas for pasture must include fencing, the regrassing of overgrazed and cultivated areas, and the establishment of adequate watering facilities in the form of dams, dugouts, wells and springs.

In low rainfall areas Crested Wheat Grass is used most extensively for regrassing purposes due to its drought tolerance and suitability for early spring grazing. This latter feature makes it ideally suited for use in rotation with native grasses which produce their heaviest yields after the 15th. of June if protected earlier in the season.

Stockwatering sites are located as nearly as possible within 1 mile of each other in bush country and areas of rough topography, and 1-1/2 miles in open range. It has been found that cattle travelling greater distances to water do not make normal gains in weight. The proper positioning of stockwatering sites is also a major factor influencing the distribution of cattle in pastures and the evenness of grazing over a pasture area.

Finally, the policy of P.F.R.A. to maintain a 50% carryover of grass cover from year to year where ever it is possible and feasible has been an important factor in preventing overgrazing in pastures and maintaining pasture grass in a healthy, vigorous condition.

To keep up to date with advances in range management, P.F.R.A. has established a special Pasture Improvement section under the supervision of the Community Pasture Branch. This section plans and carries out an investigational and work program designed, through the application of agricultural and engineering principles, to further increase the carrying capacity and to improve the drought resistance of grass land in community pastures. This program, which has now extended into 44 pastures is being carried out in close co-operation with the Experimental Farms Service. Production measurements are taken under supervision of the Experimental Farms Service to determine the increased production of improved areas.

Community Pastures operated by P.F.R.A. are located either in the open plains of southwestern Saskatchewan or in the parkland region of central Saskatchewan and Manitoba.

In the open plains region which is characterized by low precipitation and high evaporation, water conservation has proved to be the most important single factor affecting grass production. During 1957, 19 dams and 13 dugouts were constructed, 6 springs were developed and 6 dams were repaired. In addition to the development of stockwatering facilities, practices based on ways of conserving and utilizing the available supplies of moisture for increased grass production are being investigated. These include water spreading methods, surface and deep pitting, and controlled flood irrigation. Approximately 1240 acres were improved through various water conservation methods in 1957.

Water spreading by dykes and contour furrowing increases the effective utilization of water resources in an area. It also provides protection for dams, dykes and irrigation works in the lower reaches of a drainage area by slowing and reducing the rate and amount of runoff from rapidly melting snow or heavy rains. During the year studies were continued on the areas where water spreading systems have been established.

Shallow pitting and deep pitting are methods of creating numerous small water retaining basins in the soil, thereby making it possible for a greater amount of water to be absorbed by the soil. In 1957, 256 acres of land in the Caledonia pasture were pitted to check the efficiency of this operation.

In some areas of the pastures it is possible to develop flood irrigation schemes. These add to the over-all production by encouraging grass growth during dry periods when grass production in the pastures is generally reduced. Several flood irrigation schemes were advanced in development. These included Lonesome Lake and Lewis Flats in the Reno #1 pasture, Dixon Slough and the Border Sloughs in the Battle Creek Pasture, Dry Lake in the Beaver Valley Pasture and the Govenlock dyke irrigation scheme in the Govenlock Pasture, involving collectively an area of 3000 acres.



Contour furrows constructed in Val Marie Community Pasture as a moisture conservation measure to increase rangeland carrying capacity.

Ref. # 13975

The main problems facing Pasture Improvement in the parkland region is one of land clearing rather than water conservation. With the control of grass fires in the parkland area, native trees and brush soon establish themselves, greatly reducing the amount of grass produced and increasing the difficulty of maintaining pasture facilities. Efforts are concentrated in finding an economical way to open up this land for grazing, and to protect pasture facilities from the invasion of trees and brush. Every method and new technique in land clearing has been used in an attempt to determine the most economical procedure to adopt for large scale operations.



Land clearing methods vary in accordance with the size and density of the natural tree growth. The following methods have been used: -

1. Serrated disc implement for brush and light tree growth.
2. Rotary brush cutters for growth up to 3-1/2" stem diameter.
3. 'V' shaped cutter to cut down heavy growth in the summer.
4. Bulldozers to knock down heavy growth during winter.
5. Piling of cut or knocked down growth for burning.
6. Chain and cable to knock down and windrow heavy growth.
7. Controlled burning of knocked down and piled growth after good native grass cover is established.
8. Controlled burning of standing growth.
9. Herbicidal spraying by aircraft.



Clearing small tree growth with a rotary brush cutter mounted on the front of a small tractor.

Ref. # 13763

As soon as the tree growth is removed in the Parkland area, native grass responds immediately to the direct sunlight resulting in an abundant growth during the first year after clearing. Where the growth is knocked down and not piled, grazing is not possible until the brush has been burned which can usually be done after two to three years. Piling, windrowing, burning of the standing growth where possible, or aerial spraying, permits limited grazing the same year. Aerial spraying is usually confined to the control of regrowth of trees and brush in cleared areas and along fireguards. During 1957, 8688 acres of land were cleared by various land clearing methods.



## REHABILITATION AND RESETTLEMENT

The Prairie Farm Rehabilitation Act was passed to rehabilitate the farming population of the Canadian prairies, which following the drouth and depression of the early 1930s was left destitute. One of the first steps to rectify this situation was the development of a water conservation program to overcome the immediate problems of farm water supply. As a result of this program which provides financial and engineering assistance to farmers for the construction of water conservation facilities, many farmers have been able to rehabilitate themselves without moving to new locations.

In addition to this type of rehabilitation, the Government of Canada constructed several community irrigation projects in some of the driest areas in southwestern Saskatchewan. The irrigated land associated with these projects has been divided into 40-acre plots and made available to the farmers in the surrounding area for the production of livestock feed. By providing an assured supply of feed for livestock even when dry land crops failed, these projects have helped stabilize the agricultural economy throughout the areas in which they are located.

Where it has not been possible to affect the rehabilitation of farmers on the land they are operating by assisting them to develop an adequate farm water supply, or in the drier areas, through the development of community irrigation projects, farmers are assisted in moving to new locations. Where dry land farms are not available at a convenient distance, the Government of Canada through P.F.R.A., will assist in moving farmers and their effects to irrigated land in Alberta that has been acquired to accommodate farmers in need of resettlement.

Following is an account of the irrigation projects in Saskatchewan and Alberta which were built for rehabilitation and resettlement of prairie farmers and which P.F.R.A. continues to operate on behalf of the Government of Canada.

### Val Marie Irrigation Project

One of the first irrigation projects built by P.F.R.A. for rehabilitation and resettlement purposes is located on the Frenchman River near the Town of Val Marie in southwestern Saskatchewan. The Val Marie Irrigation Project contains about 4300 acres of irrigable land. Irrigation water for this project is gathered from the Cypress Hills and is stored in the Cypress Storage Reservoir well up in the Cypress Hills at the headwaters of the Frenchman River. A dam near Val Marie on the Frenchman River provides local storage for the irrigation water used on the project.

The 4300 acres of irrigated land on the Val Marie project were cropped under various agreements by 84 farmers during 1957. Approximately 5350 tons of feed were produced which is sufficient to supplement the winter feed requirements of the farmers using the project. The average production of forage crops has increased uniformly from an average of 1.0 tons per acre in 1954 to an average of 1.4 tons per acre in 1957. This increase can be attributed to one or more of the following: - improved distribution of water, improved drainage, new hay stands coming into production and a general desire of the farmers

to produce the maximum quantity of hay. Some 500 acres of irrigated land has been fenced for winter grazing by the individuals owning the land.

P.F.R.A. crews and equipment carried out the required maintenance and improvement work during the year. In addition, 600 feet of main canal east of the Town of Val Marie were relocated and lined with compacted clay. The toe of the canal bank next to the river was stabilized by driving piles along the bank next to the stream and a river diversion below Val Marie Reservoir begun in 1955 was completed.



Cypress Lake storage reservoir with the main canal, hay flats, Frenchman River channel and diversion canal, left to right in the foreground.

Ref. # 13955

### West Val Marie Irrigation Project

The West Val Marie Irrigation project is located west of the Val Marie project and uses water from Cypress Storage Reservoir via the Frenchman River. The West Val Marie dam provides local storage for irrigation for approximately 3500 acres of land. A portion of the area involving some 800 acres which can be partially irrigated, is fenced and cross-fenced for use by the Val Marie Community Pasture. The remainder is subdivided into fields and rented out for hay under lease or hay permit. The land fronting on the Frenchman River is further subdivided to provide building sites for farmers wishing to move on to the project. Eight of these building sites are now occupied by full time



resident farmers. The remaining proposed subdivisions are let out on a yearly agreement similar to other forage land on the project.

During 1957, forty-three farmers leased 2250 acres and produced 3440 tons of feed averaging 1.6 tons per acre as compared to 2.3 tons per acre in 1956. The decreased production was attributed to inadequate irrigation to compensate for a lack of fall and spring moisture and to the relatively cold late spring in that area.



General view of the irrigated area on the West Val Marie Irrigation project.

Ref. # 13985

In the irrigated pasture area reserved for use by the Val Marie Community Pasture a 450 acre field which has been cross-fenced into two pastures, carried 700 head of cattle for one month while a smaller 350 acre pasture carried 195 head for two weeks. Four hundred head of cattle grazed the entire project during December and January. The majority of these cattle are fed and sheltered in the willows along the river when the weather becomes too severe for open grazing. The manager of the Community Pasture supervises the grazing and pasturing operations in the irrigated pasture area.

A power line was constructed through the project in 1957 linking the established farmers, irrigation headquarters, and pasture headquarters to the main power line operated by the Saskatchewan Power Corporation.

## Eastend Irrigation Project

The Eastend Irrigation Project which consists of 3300 acres of irrigable land, is situated in the Frenchman River Valley 60 miles northwest of Val Marie. The irrigated area extends for fifteen miles southeast of the Town of Eastend. Water for this project also is obtained from the Cypress Storage Reservoir with local storage being provided by the Eastend Reservoir.

During the 1957 season, the 42 farmers at Eastend irrigated 2180 acres, producing 2200 tons of forage which will be used to supplement the feed requirements of 3200 head of cattle and 2200 head of sheep owned by the farmers using the project. There are now 1100 more acres in forage on the project than in 1953 and 1400 more head of cattle.

Many areas of this project require levelling so that the water may be used more efficiently. During 1957 P.F.R.A. assisted the farmers to level some 200 acres of irrigated land. Other repair work associated with canal maintenance was carried out by P.F.R.A. crews. The Uglum extension to the Eastend Irrigation Project purchased by P.F.R.A. in 1956 was further developed during 1957. In addition to the 450 acres owned



Irrigation flume for the Uglum extension with the town of Eastend in the background.

Ref. # 14109

by P.F.R.A., 150 acres of privately owned land can be supplied with water by this



extension. The soil in areas where alkali salts limit growth, has improved during the period from 1952 to 1956. The improved drainage, combined with limited irrigation due to excessive rainfall, has resulted in natural leaching of the salts from the soil surface.

During the summer of 1957, low rainfall and hot weather increased the evaporation in a seepage area commonly called "The Lewis Site" causing the salt condition in this area to increase. If a series of dry years should continue, alkali could become a serious problem in this area. Intensive work is being conducted by the Drainage Division of P.F.R.A. to reclaim alkali areas and to prevent any increase of alkali by reducing canal seepage.

### Consul Irrigation Project

The Consul area is a semi-arid region, slightly drier than other tracts of range-land in southwestern Saskatchewan. The region is ideally suited for raising cattle when a reliable source of feed is available. Irrigation has made it possible to produce forage crops in this area. The irrigation water is obtained from Cypress Storage Reservoir via a series of canals. The Consul Project contains approximately 3580 acres of irrigable land which are operated by 51 plot holders. About 2900 tons of forage were produced on the project during 1957. This will be used to supplement the winter feed requirements of about 3500 head of cattle and 1500 sheep. Hay harvested from the irrigation project averaged 1.5 tons per acre. The total production was much higher, however, as 35% of the second crop was left for fall grazing. There has been an increase of about 800 acres of forage crops on the project since 1954.

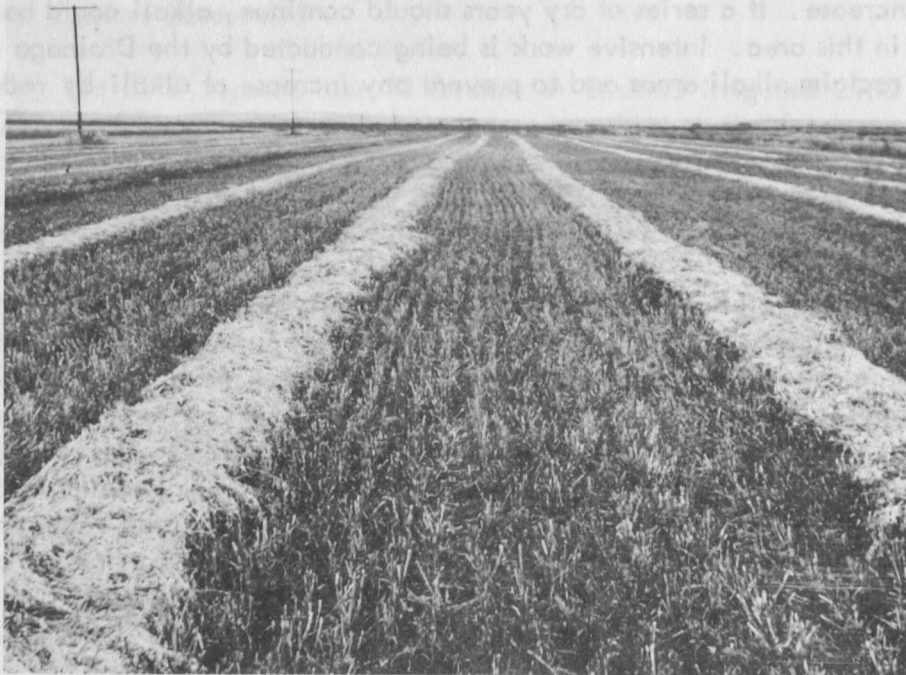
During 1957-58, normal maintenance work such as clearing and repairing ditches and canals, controlling weeds and regrassing ditch banks was carried out by P.F.R.A. crews. In addition, farmers on the project were assisted in levelling some 300 acres of irrigable land. This will help prevent future drainage and alkali problems. To provide improved drainage throughout the project many surface drains were constructed in 1957.

### Maple Creek Irrigation Project

The Maple Creek Irrigation Project is located north of the Cypress Hills in the Maple Creek area. Irrigation water for this project is obtained from run-off on the northern slopes of the Cypress Hills. By storing this water in strategically located reservoirs along the various stream courses it is possible to irrigate some 10,000 acres of land, 4800 acres of which are owned by the Government of Canada and 5200 are owned privately. The irrigated area is comprised of the Maple Creek Flats west of the town of Maple Creek, the Upper "V" and Lower "V" areas 20 miles north of Maple Creek and several private flood schemes along the various water courses flowing from the slopes of the Cypress Hills.

The Maple Creek area is a semi-arid region, subject to strong chinook winds causing a high rate of evaporation. A large percentage of the soils in the area are very light in texture and have a low moisture holding efficiency. Under dry land conditions

this land would produce very little feed for winter use. The 10,000 acres under irrigation on this project produces an average of more than 2 tons of feed per acre each year. The farming economy of this area has been greatly improved as irrigation makes it possible for the ranchers to carry an increased number of cattle.



Oats in swath grown as a companion crop with 1st. year Alfalfa in a border dyke irrigated area on the Maple Creek Flats.

Ref. # 15034

This project provides an assured feed supply for a livestock population of 10,000 cattle and 2000 sheep owned by 133 farmers using the project. Over 13,000 tons of alfalfa were produced on irrigated land during 1957. In addition, a portion of the Upper "V" grazed 900 head of cattle for a period of 4 months. In 1957, due to the rainfall in the latter part of June and a cool period during the second irrigation, higher crop yields were obtained than in 1956. Irrigated hay plots average over 2-1/2 tons per acre and the improved border dyke and ditch schemes yielded as high as five tons per acre of alfalfa from two cuttings.

Much of the work carried out by project personnel during 1957 was devoted to project improvement. Farmers were assisted to level their land, many worn out irrigation structures were repaired or replaced and canals were cleaned and repaired.

Work was continued during 1957 to reclaim areas on the project, particularly on the Upper and Lower "Vs" which have become alkaline and unproductive. The



work on the electric pumps was completed and they will be in operation early in 1958.



Second cut Alfalfa bales in an area irrigated by the border dyke system on the Maple Creek Irrigation project :

Ref. # 15035

### Swift Current Irrigation Project

The irrigated land of the Swift Current Irrigation Project is located east of the city of Swift Current and is supplied with water by the Swift Current Creek which rises in the northeastern slopes of the Cypress Hills. There are approximately 20,000 acres of irrigable land on this project with about 12,000 acres undergoing development at the present time. The Swift Current, Herbert and Waldeck Irrigation districts purchase water at a nominal fee from P.F.R.A. but otherwise operate independently. The Rush Lake project is operated by P.F.R.A. for the Government of Canada.

The North Rush Lake district with an area of about 4700 acres of irrigable land is divided into 20 and 40 acre plots and leased to farmers in the surrounding area. During 1957, one hundred and thirty-six farmers produced 6795 tons of feed and 8700 bushels of coarse grains on these plots. Due to the dry season, 6300 acre feet of water were required for irrigation. This is more than was used in any previous year.

The South Rush Lake area contains approximately 1680 acres of land which has not been developed for summer irrigation but is flood irrigated during the spring. A three-year forage seeding program was started in 1956 and by the end of 1957-58, one thousand and forty-five acres had been seeded to a forage crop mixture. Fifty-one farmers produced 850 tons of feed and 6000 bushels of coarse grains in the South Rush Lake area during 1957.

The feed produced in the Rush Lake Flats is used to supplement the winter feed requirements of 12,000 head of cattle owned by 187 farmers. Since 1951 there has been an 80% increase in the cattle population in the area surrounding the Rush Lake Flats.



A Brome grass and Alfalfa mixture grown on the North Rush Lake Flats of the Swift Current Irrigation project.

Ref. # 11036

A P.F.R.A. project crew was steadily employed in repairing and installing structures and in maintaining and clearing supply and drainage canals and ditches. To control seepage and excess water problems as they appear, additional surface drains were constructed and older drains were improved. In addition, the agricultural development program of land levelling and the establishment of forage crops was continued through 1957.

The development of the potential irrigable areas in the Waldeck, Herbert, and Swift Current districts is under the direction of the Saskatchewan Department of Agriculture. Water for irrigation in these districts is supplied from the Herbert, Highfield, Lac Pelletier and Duncairn Reservoirs.







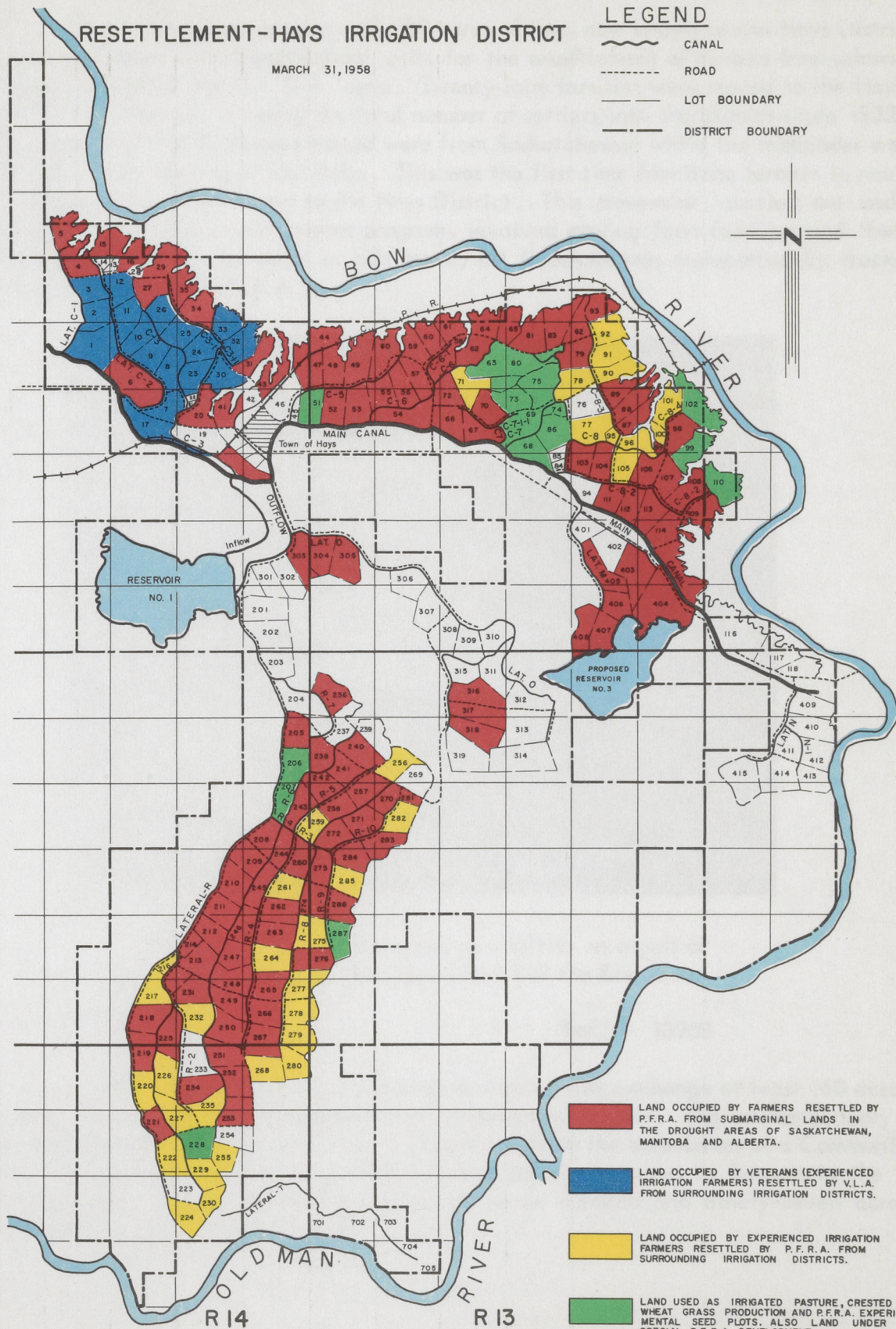
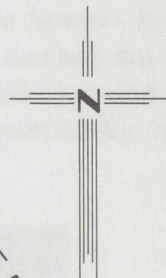
# BOW RIVER PROJECT





## RESETTLEMENT-HAYS IRRIGATION DISTRICT

MARCH 31, 1958

### LEGEND

-  CANAL
-  ROAD
-  LOT BOUNDARY
-  DISTRICT BOUNDARY



-  LAND OCCUPIED BY FARMERS RESETTLED BY P.F.R.A. FROM SUBMARGINAL LANDS IN THE DROUGHT AREAS OF SASKATCHEWAN, MANITOBA AND ALBERTA.
-  LAND OCCUPIED BY VETERANS (EXPERIENCED IRRIGATION FARMERS) RESETTLED BY V.L.A. FROM SURROUNDING IRRIGATION DISTRICTS.
-  LAND OCCUPIED BY EXPERIENCED IRRIGATION FARMERS RESETTLED BY P.F.R.A. FROM SURROUNDING IRRIGATION DISTRICTS.
-  LAND USED AS IRRIGATED PASTURE, CRESTED WHEAT GRASS PRODUCTION AND P.F.R.A. EXPERIMENTAL SEED PLOTS, ALSO LAND UNDER SPECIAL P.F.R.A. DEVELOPMENT.







## Bow River Resettlement Project

On the Bow River project, 27,000 acres of land now known as the Hays District, are being developed into irrigated farm units for the resettlement of farmers from submarginal farms throughout the P.F.R.A. area. Twenty farm families were moved to the Hays District during 1957-58, bringing the total number of settlers into the district since 1952, to 178. Twelve of the 20 farmers moved were from Saskatchewan while the remainder were from the McCreary district of Manitoba. This was the first time Manitoba farmers in need of resettlement have been moved to the Hays District. This movement, carried out under the established P.F.R.A. resettlement program, involved moving farm families and their effects up to 700 miles. To assist in this move, all livestock was transported by trucks owned and operated by P.F.R.A.



The new home and farmstead of a settler on a unit of irrigated land in the Hays district of the Bow River project.

Ref. # 13958

In order to qualify for resettlement the farmer must exchange at least 160 acres of dry land for the farm unit of irrigated land he wishes to acquire. The exchanged dry land is regrassed by P.F.R.A. and if it is located outside the boundaries of a Community Pasture, the regrassed land is leased for hay and pasture purposes to farmers in the surrounding area. During 1957-58 one thousand seven hundred and ninety-seven acres of exchanged land was seeded to grass.

## MAJOR IRRIGATION AND RECLAMATION PROJECTS

The Prairie Farm Rehabilitation Act through its various programs is generally meeting the immediate needs of the prairie farmer. In recent years, however, attention has been given to the construction of large irrigation and reclamation projects involving the development of thousands of acres of land. This is in line with Canada's long-range land use plan to provide for the expansion and stability in Canada's growing economy. These projects are undertaken by agreement between the Federal Government and the Provincial Government concerned, on a cost sharing basis. The development of large irrigation and reclamation works in Western Canada is not included under the regular P.F.R.A. appropriation but authorized separately by special vote of Parliament.

### ST. MARY IRRIGATION PROJECT

The St. Mary Irrigation project was started at the turn of the century, when a simple diversion on the St. Mary river near the International Boundary was built by the Northwest Irrigation Company to bring water for irrigation to lands in the Magrath-Lethbridge region. Under this plan nearly 120,000 acres of land were developed for irrigation by 1925. At times, however, lack of storage facilities caused water shortages to develop particularly during peak irrigation seasons. To correct this situation, and also to enormously expand the project, the P.F.R.A. began construction of the St. Mary reservoir on the St. Mary river in 1946.

As now planned the St. Mary Irrigation project is expected ultimately to contain 500,000 acres of irrigated land. The area is limited by the water supply, which is confined to that available from the Waterton, Belly, St. Mary and Milk rivers. To utilize Canada's share of these four important international rivers, the Government of Canada and the Province of Alberta are jointly developing this project in southern Alberta.

The agreement between the Federal and Provincial Governments provides that the P.F.R.A. would finance the main reservoirs and connecting canals, while the province would finance the distribution system. All planning, engineering and administrative work involved in the development of the entire project, including the provincial portion, remains the responsibility of P.F.R.A.

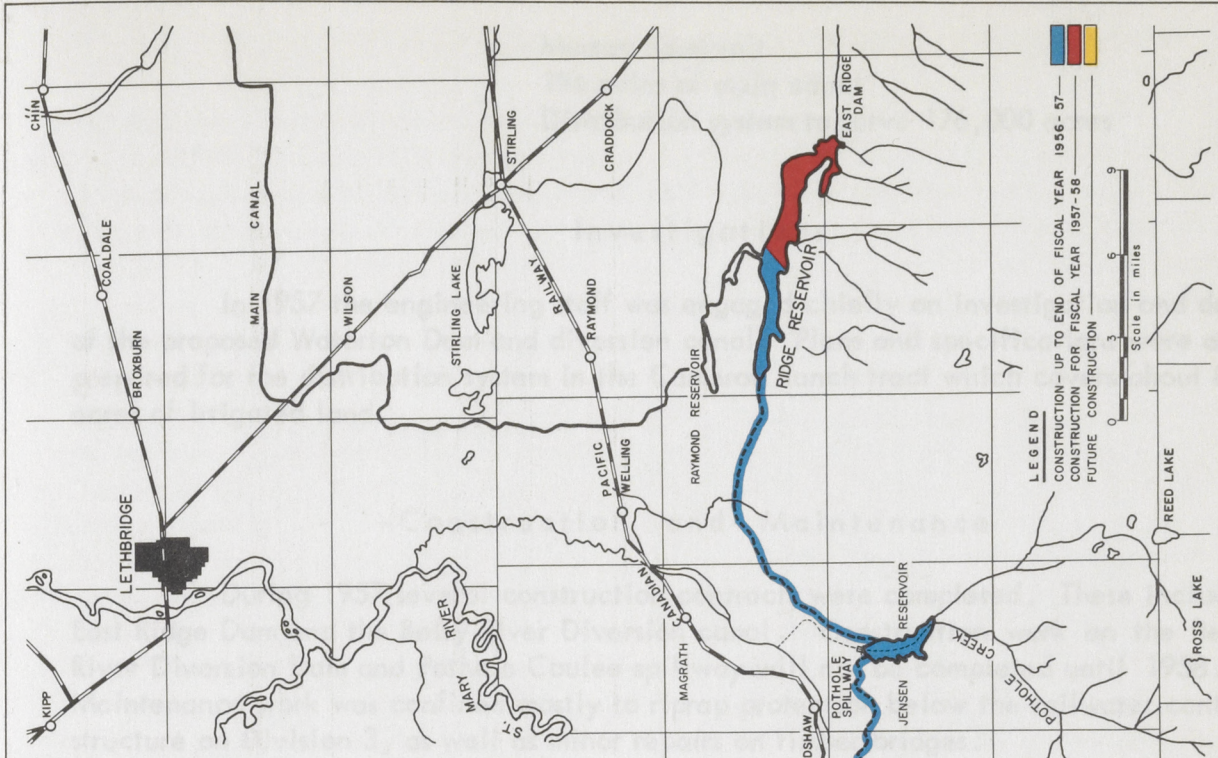
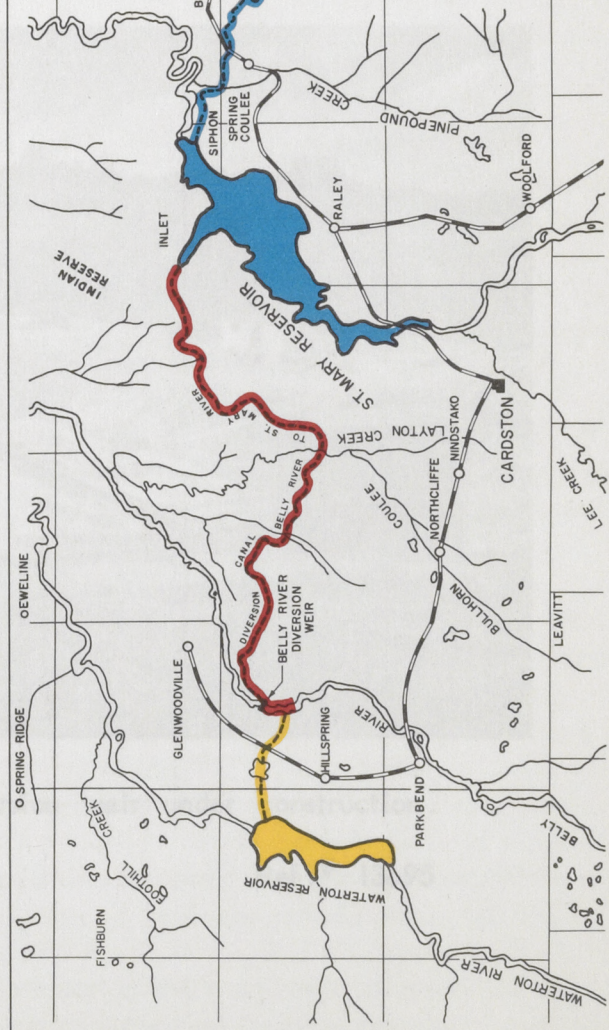
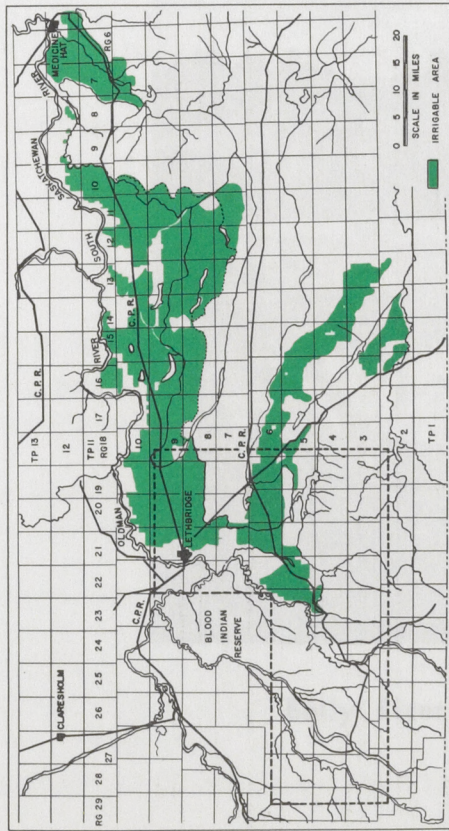
During the last eleven years P.F.R.A. has financed and constructed the following works: -

- Belly River Diversion Dam
- St. Mary Reservoir
- Pothole Reservoir
- Ridge Reservoir
- 55 miles of connecting main canal

The Provincial Government has financed the following works: -

- Chin Reservoir
- Horsefly Lake Reservoir
- Rattlesnake Reservoir





LEGEND  
 CONSTRUCTION - UP TO END OF FISCAL YEAR 1956-57  
 CONSTRUCTION FOR FISCAL YEAR 1957-58  
 FUTURE CONSTRUCTION  
 Scale in miles  
 0 3 6 9

# ST. MARY IRRIGATION PROJECT

MARCH 1958





ST. LAWRENCE RIVER BASIN

ST. LAWRENCE RIVER BASIN

ST. LAWRENCE RIVER BASIN

ST. LAWRENCE RIVER BASIN

ST. LAWRENCE RIVER BASIN

ST. LAWRENCE RIVER BASIN



## Murray Reservoir

194 miles of main canal

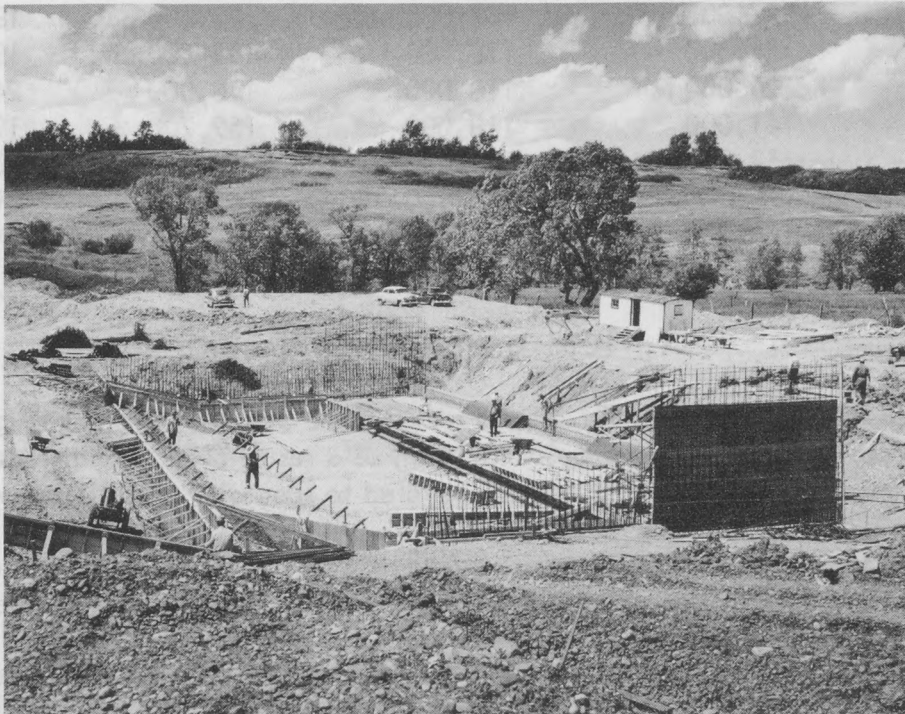
Distribution system to serve 176,000 acres

## Investigations

In 1957 the engineering staff was engaged chiefly on investigation and design of the proposed Waterton Dam and diversion canal. Plans and specifications were also prepared for the distribution system in the Cameron Ranch tract which covers about 8000 acres of irrigated land.

## Construction and Maintenance

During 1957 several construction contracts were completed. These included East Ridge Dam and the Belly River Diversion canal. Construction work on the Belly River Diversion Dam and Pothole Coulee spillway will not be completed until 1958. Maintenance work was confined mostly to riprap protection below the tailwater control structure on Division 3, as well as minor repairs on timber bridges.



Belly River diversion weir under construction.

Ref. # 13695

## Project Improvement

Repairs and alterations were made on a number of works already in operation. These included the replacement of part of the timber catwalk with concrete in the St. Mary Diversion tunnel, continued grouting of the abutment of St. Mary dam to reduce seepage in the vicinity of the spillway and the improvement of the drainage systems under two drop structures in Division 5.

## Operation

Headgates at the St. Mary dam were opened on May 7th. and dry weather resulted in the canal flow reaching 2400 cubic feet per second on June 7th. In this area irrigation was necessary to germinate many of the crops. In the older districts where specialty crops have become established, water was used steadily throughout the season. The following table shows the development of the project and the annual water consumption since 1952: -

Season	New works constructed to serve	Old district served approx.	Water delivered to a total of	Water delivered acre feet
1952	37,000 ac.	118,000 ac.	130,000 ac.	186,000 ac. feet
1953	54,000	118,000	135,000	196,000
1954	96,000	118,000	158,000	246,400
1955	141,000	118,000	159,700	190,000
1956	168,000	118,000	149,000	202,430
1957	176,000	120,100	169,900	314,493
1958	176,000			

## Agricultural Development

In the more recently developed areas of the St. Mary project irrigation has been confined to pastures and to hay crops. In 1957, as a result of dry conditions, some grain crops were irrigated. The amount of land devoted to specialty crops is increasing gradually,

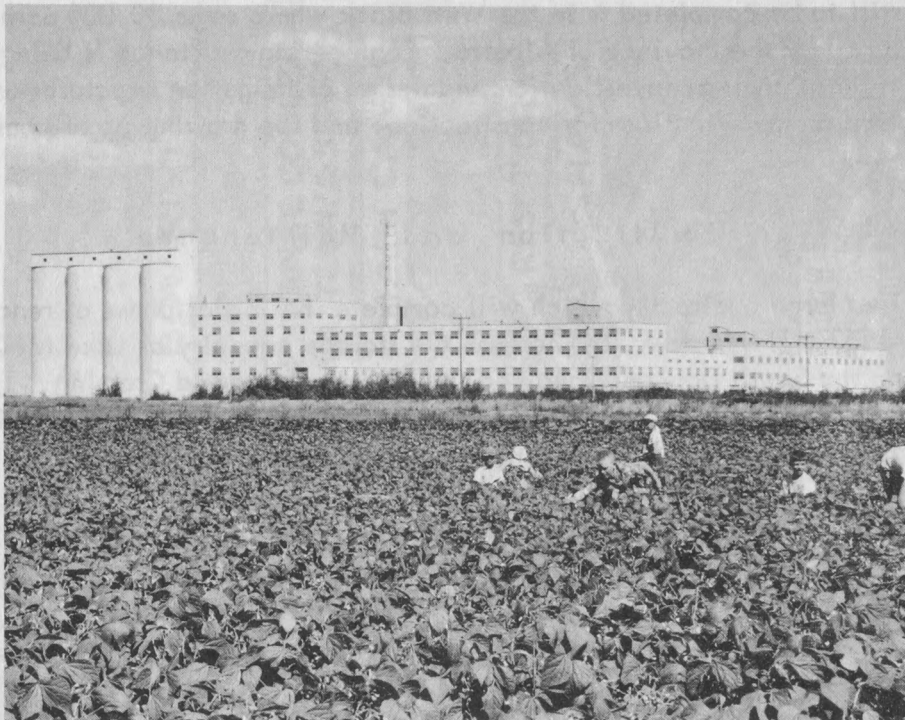
In the older districts of the project, specialty crops are firmly established and livestock production in these areas is increasing rapidly. The following acreages were grown in the Lethbridge area in 1957: -

Green vegetables	-	1,200 acres
Canning vegetables	-	8,000 "
Potatoes	-	4,800 "
Sugar beets	-	38,000 "

The average yield of potatoes was about 7-1/2 tons per acre with an average price of \$48.00 per ton being received by the farmer.

Although the average yield of sugar beets was the highest yet recorded, 13.43 tons per acre, the sugar content was down from 16.33% to 14.67%. This was considered to be due to the cold wet weather in October.





Harvesting a bean crop grown under irrigation near the Taber sugar factory.

Ref. # 13863

Livestock production in the irrigated areas continued to increase with many farmers now operating their own feedlots. Sales at the Lethbridge stockyard for the past 3 years reflect this trend.

Year	Cattle	Calves	Hogs	Sheep	% increase
1955	46,815	10,008	55,863	12,094	
1956	54,735	12,048	61,155	12,595	12.7%
1957	69,035	14,380	65,389	13,918	15.8%

#### BOW RIVER IRRIGATION PROJECT

In 1950 the Government of Canada purchased the holdings of the Canada Land and Irrigation Company which now forms the basis for the present Bow River Irrigation Project. Of the 240,000 irrigable acres in this project, the Company had developed about 57,000 acres. The Government of Canada, through P.F.R.A., proceeded with the task of renovating and enlarging the existing works and extending irrigation to a greater acreage. In addition, the responsibility for agricultural development and land settlement of the areas surrounding Vauxhall and Hays, was assumed by the Government of Canada.

The renovation and enlarging of the original facilities is now practically completed. The Development of the land and irrigation facilities is also well advanced. The

main work still to be completed is in the West Block where some 80,000 acres are currently being developed by the Province of Alberta. Engineering assistance is being given by P.F.R.A. in the planning, investigation and design of irrigation structures as well as in the preparation of specifications for construction, and the drawing up of construction material lists.

### Construction and Maintenance

Two large contracts, which will complete the initial phase of renovations were awarded in 1957. The first was to increase the storage capacity of Lake McGregor by strengthening the South Dam and involved the raising of Lomond Crossing. This work was finished in 1957-58. The second was for the construction of Drop 7A which is to be completed in 1958. In addition, 3 new bridges were built during the year.



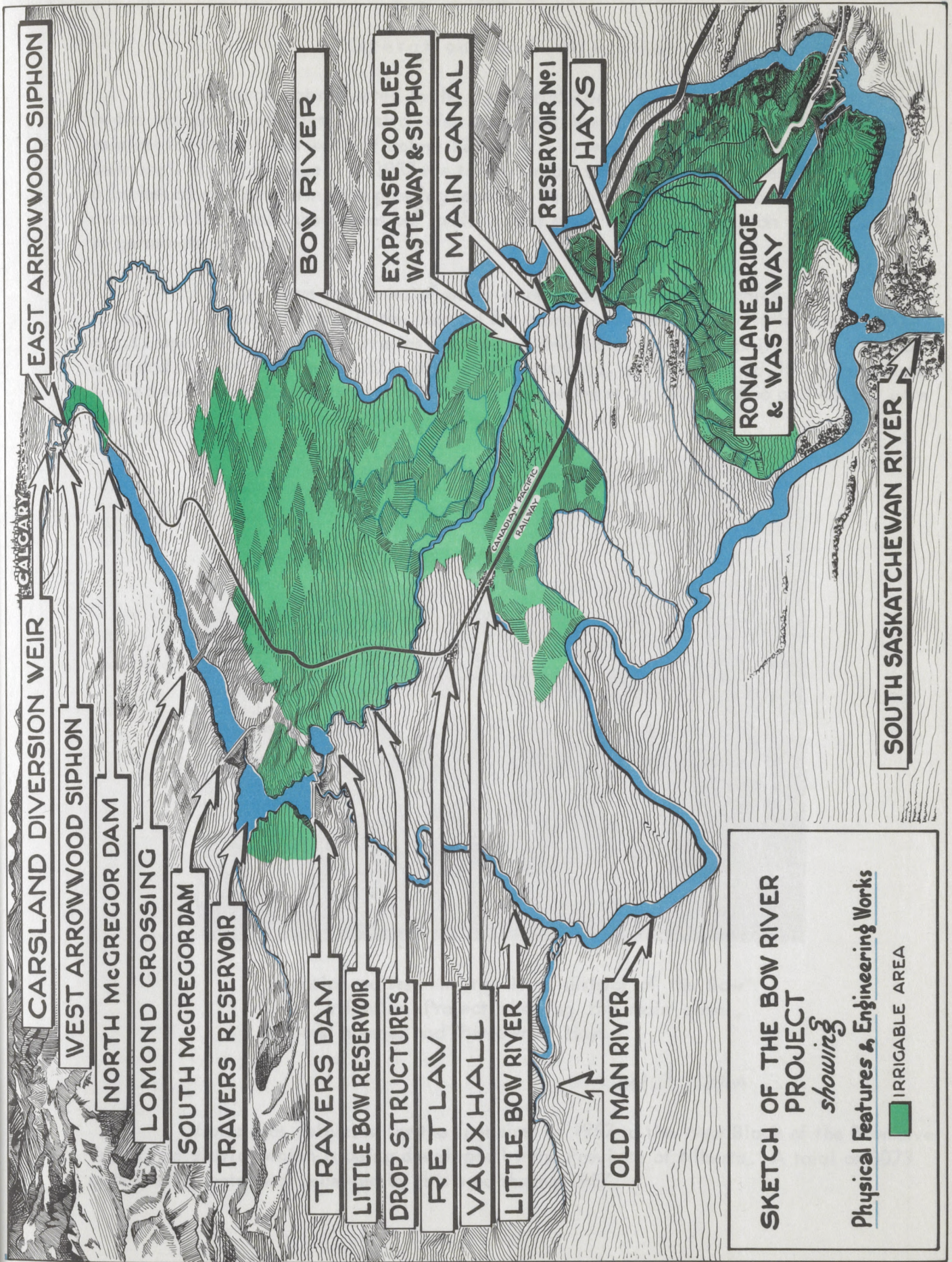
Renovating the control structure of the South Dam of Lake McGregor. This concrete was originally placed over forty years ago.

Ref. # 14714

Project maintenance crews built 258 other small structures, renewed Laterals "A" and "J", built 6 chute-type drops on Drain 4 and enlarged and cleaned out Lateral "B". A total of 25,760 lineal feet of canal was strengthened and 163,510 lineal feet were cleaned by dragline.

The construction of Highway #36 necessitated the moving of 500 feet of canal and associated structures. The renovation of canals and structures on the Blackfoot Indian Reserve was completed in 1957.







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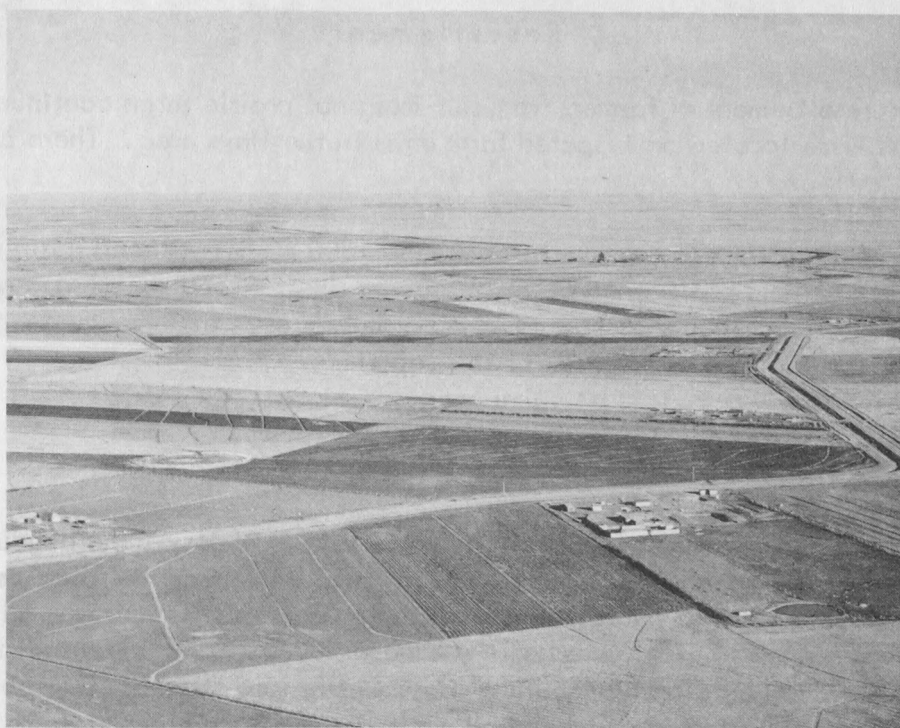
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## Operation and Irrigation

Although not reflected in the crops produced, 1957 was a year of severe drouth in the Vauxhall and Hays irrigation districts of the Bow River Project. The average annual rainfall for these areas was just below 12 inches. In recent years rainfall has frequently been well above average. In 1957 the total rainfall was less than 9 inches with only 5 to 6 inches of rainfall during the growing season. The soil moisture reserve from 1956 proved an asset in the established areas but in the newer areas at Hays, irrigation was necessary to germinate the crops.

The first farm deliveries of water were made on May 17th which was earlier than is usual. A steady increase in the demand for water continued to July 16th. when 1200 c.f.s. were being used. Deliveries totalled 48,043 acre feet to 461 units in the Vauxhall area and 30,114 acre feet to 171 units in the Hays area, or a total of 78,157 acre feet delivered to 634 units as compared to the total deliveries of 53,512 in 1956 and 43,901 acre feet in 1955.



Irrigation pattern in the Hays district of the Bow River Irrigation Project showing the main canal, settlers' homes, and the town of Hays.

Ref. # 13964

Water was delivered for the first time in 1957 to the West Block of the Bow River Project, a district which is being developed by the Province of Alberta. A total of 3073 acre feet of water was received by this area during 1957.

The natural flow into both Lake McGregor and Travers Reservoir was low. Of the 157,359 acre feet diverted from the Bow River into Lake McGregor, 137,208 acre feet were passed to the Travers Reservoir. In 1956 the lower part of Lake McGregor was dewatered to make repairs and to renovate the South Dam. It is expected to fill the part of Lake McGregor below Lomond Crossing in the spring of 1958.

### Drainage

The program of drainage improvement on the project was continued during 1957. In addition to the 1025 feet of tile drain which were put in to connect two existing tile drains in the pasture north of Vauxhall, 113,400 feet of new shallow surface drains were constructed and 123 structures such as road culverts were installed. Four thousand five hundred feet of old drain was cleaned using a dragline with a clamshell bucket. To measure the return drainage flow to the river, 4 gauging stations were put in during 1957.

### Resettlement

The resettlement of farmers from sub-marginal prairie farms continued through 1957. Twenty settlers were located on irrigated farm units in the Hays area. There are still about 15 parcels to settle.

To assist settlers to become established, 7500 bushels of seed grain were distributed on the basis of 2 bushels of threshed grain for each bushel of seed supplied, and 8450 pounds of forage seed were distributed at cost. For more details of resettlement refer to the Bow River Resettlement Program found on page 27 of this report.

### Pastures

To improve the water supply in the pastures east of Hays, the dugouts were fenced and six windmills were erected during the year to pump water from the dugouts into stock-watering troughs.

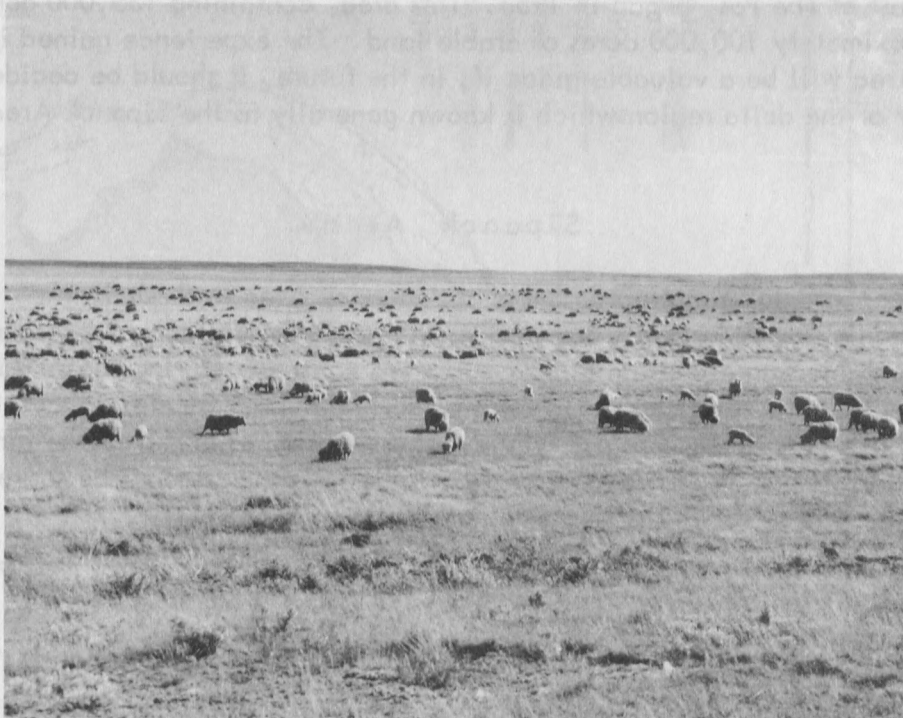
A new 3200 acre pasture south of Hays was fenced to retain sheep. Five hundred and thirty-eight acres have been broken and worked down for seeding to tame pasture. This area will provide irrigated pasture for farmers in the Hays district.

### Agricultural Development

In co-operation with the Experimental Farms Service, work is being carried on to evaluate time and cost of bringing heavily levelled land back to peak production. Work to determine best use of the lighter soils was carried out on the Windmill Flats and the water requirements of this soil were studied by the Drainage Division. The growing of forage seed plots is being discontinued as the farmers are starting to produce their own seed.



Specialty crops including potatoes, turnips, tomatoes and peas are beginning to play a more important role on this project. Livestock feeding is also increasing throughout the area. The livestock market has been good and a large number of cattle and hogs are marketed each year from the project area. Year around feeding is becoming a common practice and this provides a more even income for the farmers.



Sheep grazing in the new irrigated pasture south of Hays, Alberta.

Ref. # 13722

Weed control was carried out on an extended scale and indications are that this program is achieving success. Canal banks and roadsides were sprayed during the summer. The practice of levelling canal banks and seeding them to Crested Wheat Grass was continued. Some 70,000 pounds of Crested Wheat Grass seed were harvested from roadsides, canal banks and two plots.

### Economic Conditions

General economic conditions remained unchanged during 1957-58. Although the prices for farm products did not keep pace with the increased cost of production, livestock prices held steady, with the result that farmers with livestock did reasonably well. Grain yields throughout the area were fair and hay yields generally good. Yearly improvements indicate that success will be attained by the good farmers on this project.

## SASKATCHEWAN RIVER RECLAMATION PROJECT

Since 1950, P.F.R.A. has been engaged in an investigation to determine the feasibility of reclaiming portions of the Saskatchewan River delta, west of The Pas, Manitoba. It is estimated that this area contains about one million acres of potentially arable land. Actual development of the Pasquia Area, which is located between the Carrot and Pasquia Rivers southeast of The Pas, began in 1953. This area, containing 135,000 acres, is expected to yield approximately 100,000 acres of arable land. The experience gained in reclaiming the Pasquia Area will be a valuable guide if, in the future, it should be decided to develop the remainder of the delta region which is known generally as the Sipanok Area.

### Sipanok Area

A topographic survey program of the Sipanok Area laid out in 1954 was completed in 1957. In addition, hydrometric surveys pertaining to the discharge of sediment and water into and through the Saskatchewan River delta were continued during the summer months. A new sediment discharge metering station was established about 35 miles above the Sipanok Channel, at Nipawin, Sask. Besides providing information essential to the formulation of engineering plans for possible reclamation work in the Sipanok Area, the surveys also provide information which is useful in the operation of the Pasquia Project.

### Pasquia Area

#### Surveys

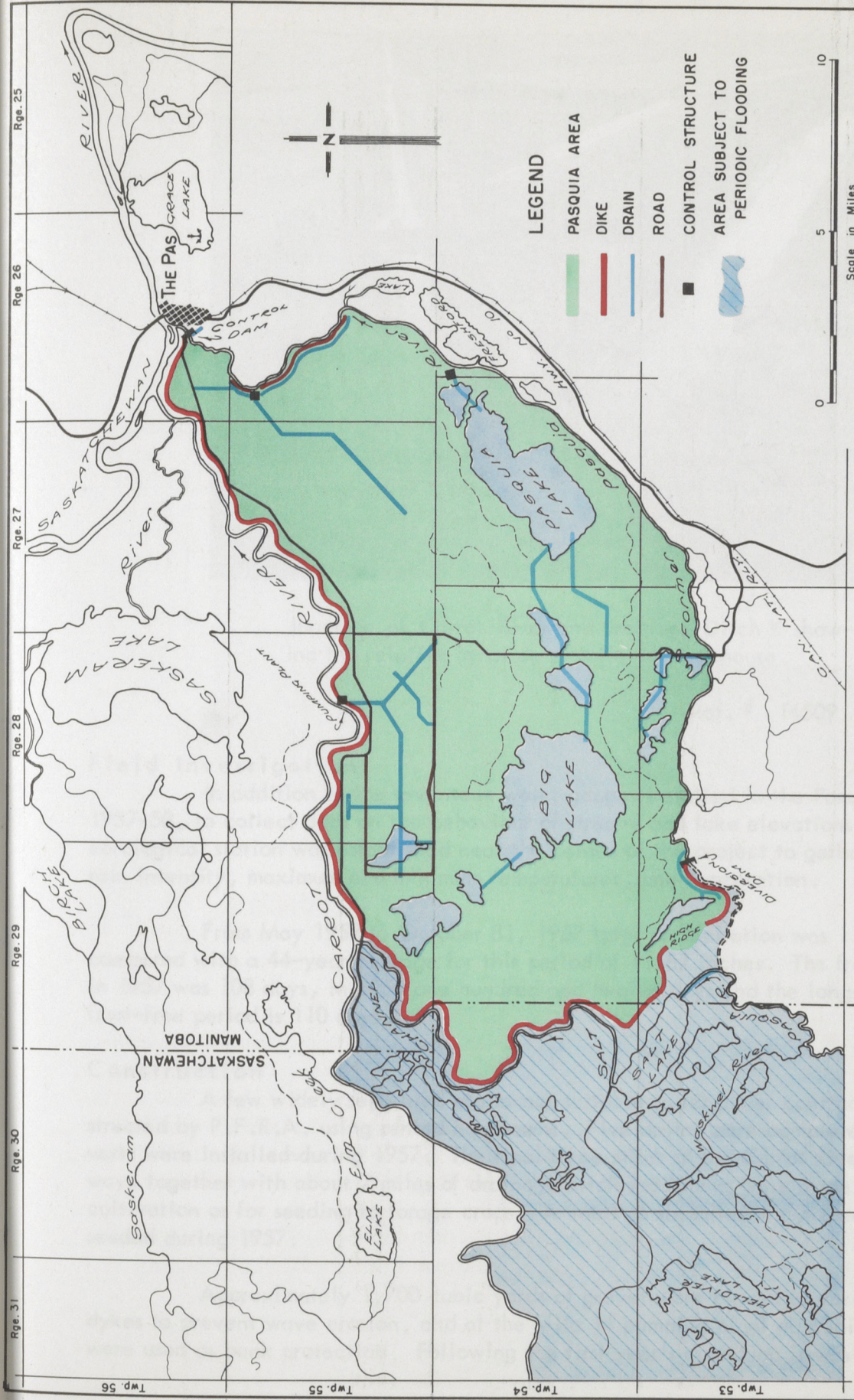
For the continued development of the Pasquia Area, surveys were made during 1957-58 to establish lines and grades for the construction of drains, roads, dykes and control structures. Center lines, levels and slope stakes were established for approximately 22 miles of drain and 13 miles of road.

#### Operation

The operations on this project were concerned principally with the disposing of surplus water. Between June 11, 1957 and freeze-up, some 25,000 acre feet of water were drained from the Pasquia Project into the Saskatchewan River by way of the Control Dam on the former Pasquia River. In future years, Big Lake will also be drained through the Control Dam as the necessary drainage ditches to permit this operation were completed in 1957.

To prevent extensive flooding of cultivated land in Tp. 55, Rge. 28, and to facilitate the construction of drains in this area, the permanent pump installed at Mile 14 in 1956, was kept in operation during May and June, discharging the runoff water into the Carrot River.





DEPARTMENT OF AGRICULTURE - CANADA  
P.F.A.

SASKATCHEWAN RIVER  
RECLAMATION PROJECT

# PASQUIA AREA

MARCH 31, 1958









Junction of Carrot River and drainage Ditch K showing the relative location of Mile 14 pumphouse.

Ref. # 14509

### Field Investigation

In addition to the seventeen water gauges installed in the Pasquia Area during 1957-58, to collect data on the behaviour of streams and lake elevations, a small meteorological station was established near the center of the project to gather information on rain intensity, maximum and minimum temperatures, and evaporation.

From May 1957 to October 31, 1957 total precipitation was 11.42 inches as compared with a 44-year average for this period of 11.87 inches. The frost-free period in 1957 was 108 days, in 1956 one hundred and twelve days and the long-term average frost-free period is 110 days.

### Construction

A few widely separated drains not suitable to let under contract, were constructed by P.F.R.A. using rented equipment. Five drains were completed and five culverts were installed during 1957. The final three miles of the Carrot River dyke right-of-way, together with about 7 miles of drainage ditch spoilbanks were made ready for cultivation or for seeding to forage crops. A total of six miles of dyke and berm were seeded during 1957.

Approximately 1,700 cubic yards of gravel were placed at various points along dykes to prevent wave erosion, and at the Mile 14 pumping plant 40 cubic yards of rock were used as bank protection. Following the first year's operation it was found necessary

to make certain additions and alterations to the Mile 14 pumping station to improve its operation. To alleviate flooding at Mile 14, a dyke was constructed during 1957 on a small creek which contributes to spring flooding of that area.

The campsite shelterbelt planted in 1956 was improved by replacing the dead willows and by planting an additional 300 spruce trees. The campsite area was sown to grass in the spring of 1957 and additional landscaping is planned for 1958.



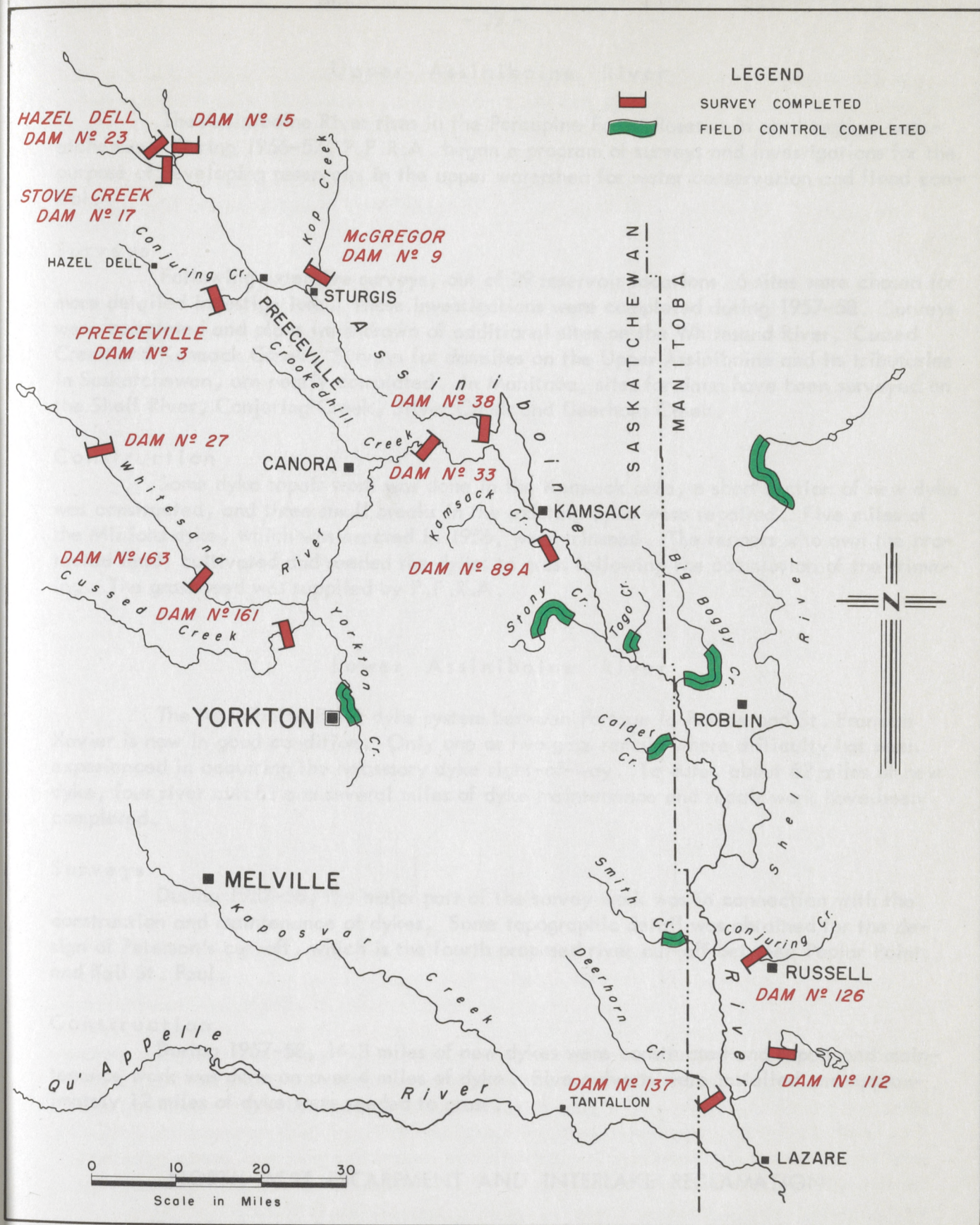
Mile 14 pumphouse and operator's cabin showing the water level in October 1957.

Ref. # 14547

#### ASSINIBOINE RIVER PROJECT

In 1950 the responsibility for flood control along the Assiniboine River between Portage la Prairie and Headingly, Manitoba, was transferred from the Federal Department of Public Works to the Department of Agriculture. Since that time P.F.R.A. has carried out a flood control program comprised of dyking and river cut-offs to protect the farmlands in that area from flooding during periods of high flow in the river. In recent years extensive surveys have been undertaken in the Upper Assiniboine River watershed, in order to locate storage sites for more effective stream regulation in the Lower Assiniboine. For the purpose of this report, the Upper Assiniboine includes the reaches upstream from the City of Brandon, while the Lower Assiniboine extends from Brandon to Winnipeg.











## Upper Assiniboine River

The Assiniboine River rises in the Porcupine Forest Reserve in northeastern Saskatchewan. During 1956-57, P.F.R.A. began a program of surveys and investigations for the purpose of developing reservoirs in the upper watershed for water conservation and flood control.

### Surveys

Following extensive surveys, out of 29 reservoir locations, 6 sites were chosen for more detailed investigations. These investigations were completed during 1957-58. Surveys were completed and plans were drawn of additional sites on the Whitesand River, Cussed Creek and Kamsack Creek. Surveys for damsites on the Upper Assiniboine and its tributaries in Saskatchewan, are nearly completed. In Manitoba, sites for dams have been surveyed on the Shell River, Conjuring Creek, Silver Creek and Deerhorn Creek.

### Construction

Some dyke repair work was done in the Kamsack area, a short section of new dyke was constructed, and three small breaks in the existing dyke were repaired. Five miles of the Miniota dyke, which was erected in 1956, were trimmed. The farmers who own the protected land, cultivated and seeded the dykes to grass following the completion of the trimming. The grass seed was supplied by P.F.R.A.

## Lower Assiniboine River

The Assiniboine River dyke system between Portage la Prairie and St. Francois Xavier is now in good condition. Only one or two gaps remain where difficulty has been experienced in acquiring the necessary dyke right-of-way. To date, about 62 miles of new dyke, four river cutoffs and several miles of dyke maintenance and repair work have been completed.

### Surveys

During 1957-58, the major part of the survey work was in connection with the construction and maintenance of dykes. Some topographic detail was obtained for the design of Peterson's cut-off, which is the fourth proposed river cut-off between Poplar Point and Bail St. Paul.

### Construction

During 1957-58, 14.3 miles of new dykes were constructed and repair and maintenance work was done on over 4 miles of dyke. Five culverts were installed and approximately 12 miles of dyke were seeded to grass.

## NORTH WEST ESCARPMENT AND INTERLAKE RECLAMATION

The North West Escarpment and Interlake Reclamation Areas include the streams and rivers flowing off the northern and eastern slopes of the Riding, Duck and Porcupine Mountains; the Whitemud River Watershed; and the Interlake district between Lakes Winnipeg

and Manitoba. The Government of Manitoba, has asked Canada, through P.F.R.A., to carry out a program of investigations and construction to relieve flood and erosion problems in that area, containing over 252,000 acres of valuable agricultural land.

## Riding, Duck and Porcupine Mountains

### Survey

As a result of erosion along Edwards Creek, there has been a build-up of silt where Edwards Creek enters Lake Dauphin. This condition could affect the recreational value of Dauphin Beach. Surveys of the lake bottom, in the vicinity of the Beach, were carried out in 1957.



Aerial view of silt deposit in Dauphin Lake at the outlet of Edwards Creek ditch.

Ref. # 14492

Additional surveys were undertaken to determine the feasibility of relocating the entrance of Edwards Creek into Lake Dauphin, and to determine the amount of scour that has taken place in the ditch. Other surveys were undertaken to study flood control problems on the Fork and North Pine Rivers, to locate an access road into the headwaters of Wilson Creek, and to obtain detailed topographic information in regard to a proposed stream gauging station site on Wilson Creek.

### Construction

Projects involving both new work and repairs to older systems in the Riding Mountain Area were completed during 1957-58. The improvements made on Edwards Creek



Mink Creek, Wilson River and Mineral Creek included bank protection, channel clearing, dyking, and the construction of a number of bridges. Apart from works designed and supervised by the P.F.R.A., several other projects, financed jointly by the Federal and Provincial Governments, were undertaken in the Duck and Porcupine Mountains. These latter jobs required periodic inspection by P.F.R.A. personnel, but were supervised in the field by employees of the Province of Manitoba.

### Whitemud River Watershed

#### Surveys

During 1957 surveys were carried out in connection with the proposed Neepawa Dam on a seven mile reach of the Big Grass Drain along the east boundary of Westbourne Community Pasture, in the flood-prone area of Beaver Creek, and on the proposed Whitemud River Diversion.

#### Construction

Work, other than surveys, done in the Whitemud River Watershed consisted of clearing scrub and trees from a 50 mile reach of the Whitemud River channel. This work, the purpose of which was to increase the discharge capacity of the channel, was financed jointly by the Municipal, Provincial and Federal Governments.

### Interlake Reclamation Project

#### Surveys

A survey was undertaken in the Swan Creek-Burnt Lake area of the Interlake region of Manitoba. The object of this survey was to design a means of maintaining the water levels in the lakes and sloughs in the area and to lay out a drainage system to carry flood waters to Lake Manitoba.

### SOUTH SASKATCHEWAN RIVER DEVELOPMENT

The present proposal is to develop the waters of the South Saskatchewan River by constructing an earth dam midway between the Towns of Outlook and Elbow. Located in central Saskatchewan, this dam would provide water for irrigation, a site for electric power, stream flow regulation and flood control, urban water supply, recreational facilities, and water for other industrial and domestic uses. Survey work on the South Saskatchewan River to determine the feasibility of this development commenced in 1943 and from an engineering standpoint, this has now been established. Sufficient information has now been gathered to proceed with construction should it be decided to develop this project.

#### Engineering Investigations

During 1957-58 the main work undertaken on the South Saskatchewan River was the continuation of an extensive drilling investigation of site foundations. Silt-sampling and stream flow measurements were continued at Outlook on the South Saskatchewan River, and at Borden on the North Saskatchewan River. Survey work undertaken during the season consisted of bore-hole survey ties, and the running of 24 miles of preliminary survey line for a high-line canal as a possible extension to the project.

### Pre-development Farm

Near the town of Outlook in Saskatchewan, the Federal Government has established a 171 acre pre-development irrigation and experimental farm to study irrigation techniques and practices under the soil and climatic conditions prevailing in that area. Water for irrigation is obtained by pumping from the South Saskatchewan River.

The area is divided into two parts. One part, approximately 16 acres in size, is operated by the Experimental Farms Service where detailed experimental work is conducted on irrigated crops and soils. The other part of the farm, 155 acres in size, is operated by the P.F.R.A. to demonstrate on a field scale, farming practices and irrigation methods recommended for the area. The P.F.R.A. follows a carefully planned soil improvement program on the farm, using a ten year grain-grass rotation, plus commercial fertilizers, manure, and legumes which has resulted in a steady improvement in crop yields over the years since the program was first started.

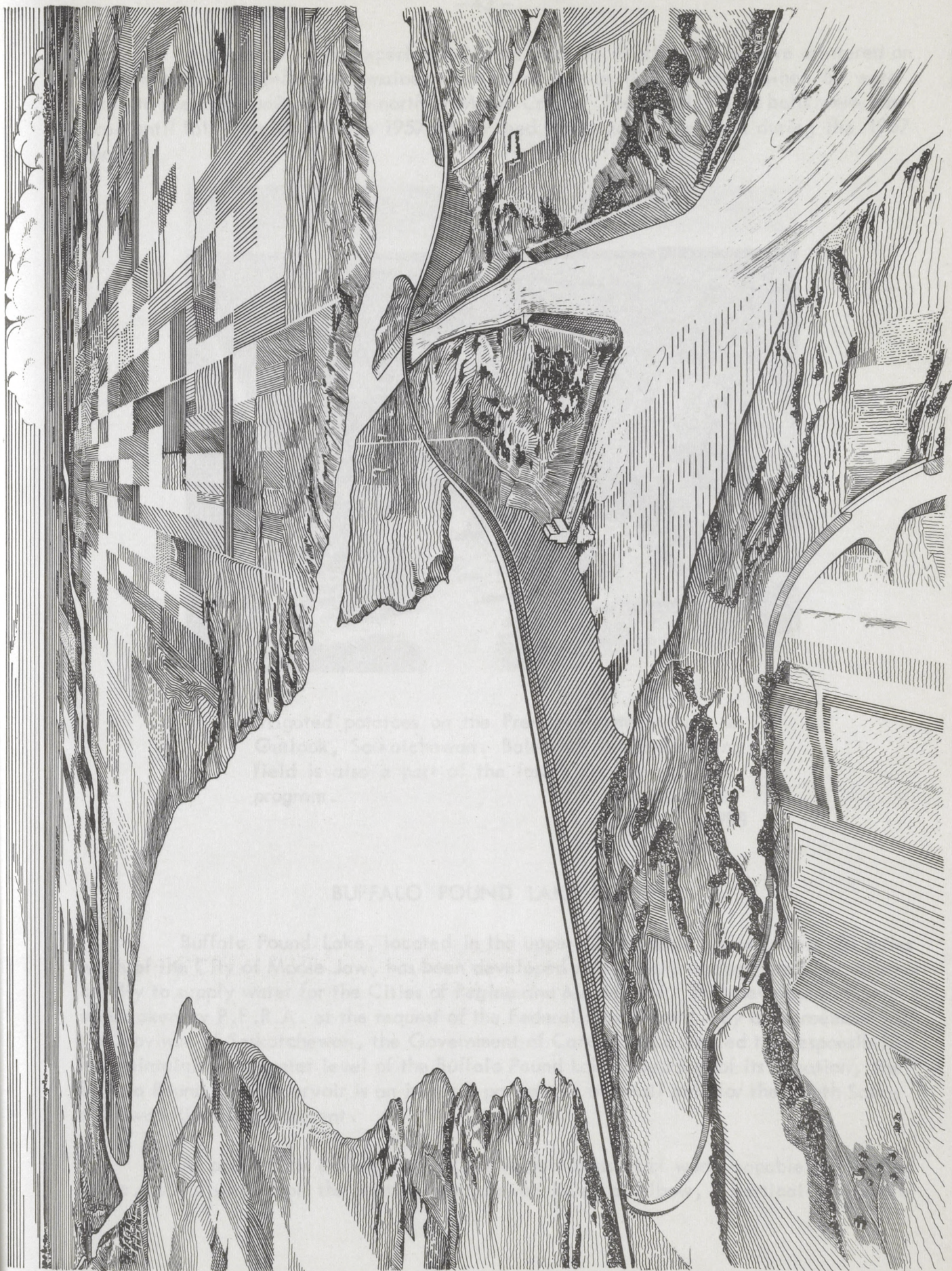


Farmstead and dugout of the Pre-development Farm at Outlook, Saskatchewan, with the South Saskatchewan River and railway bridge at the top of the picture.

Ref. # 11580

During the pumping season, May 7th. to September 23rd, an average of 15 inches of water was used which is an increase of 3 inches over the amount used in 1956. Rainfall during the same period was 6.2 inches, about one inch less than the previous year.







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In addition to the experimental field work 96 yearling bulls were wintered on the farm during 1956-57 and remained there on pasture until mid-summer when 54 were taken to the Community Pasture north of Maple Creek. The remaining 42 bulls were pastured until fall then wintered in 1957-58 on feed produced on the farm during the 1957 season.



Irrigated potatoes on the Pre-development Farm at Outlook, Saskatchewan. Baled hay in the adjoining field is also a part of the farm's pre-development program.

Ref. # 2988

### BUFFALO POUND LAKE PROJECT

Buffalo Pound Lake, located in the upper Qu'Appelle Valley about 20 miles north of the City of Moose Jaw, has been developed into a water storage reservoir principally to supply water for the Cities of Regina and Moose Jaw. This development was undertaken by P.F.R.A. at the request of the Federal Government. By an agreement with the Province of Saskatchewan, the Government of Canada has accepted the responsibility for maintaining the water level of the Buffalo Pound Lake. Because of its location, the Buffalo Pound Lake Reservoir is an integral part of the over-all plan for the South Saskatchewan River Development.

At present the Buffalo Pound Lake Project consists of works capable of pumping 120 c.f.s. of water from the South Saskatchewan River at Elbow, a vertical distance of

107 feet, and delivering it 12 miles away at the summit of the Qu'Appelle Valley. Construction work on the intake from the South Saskatchewan River and the two pumping plants was 90% completed by March 31, 1958. The second part of this project was to improve the flow characteristics of the Qu'Appelle River between the summit of the Qu'Appelle Valley and Buffalo Pound Lake. This was accomplished through an extensive channel improvement program started in 1955 and completed in 1957.



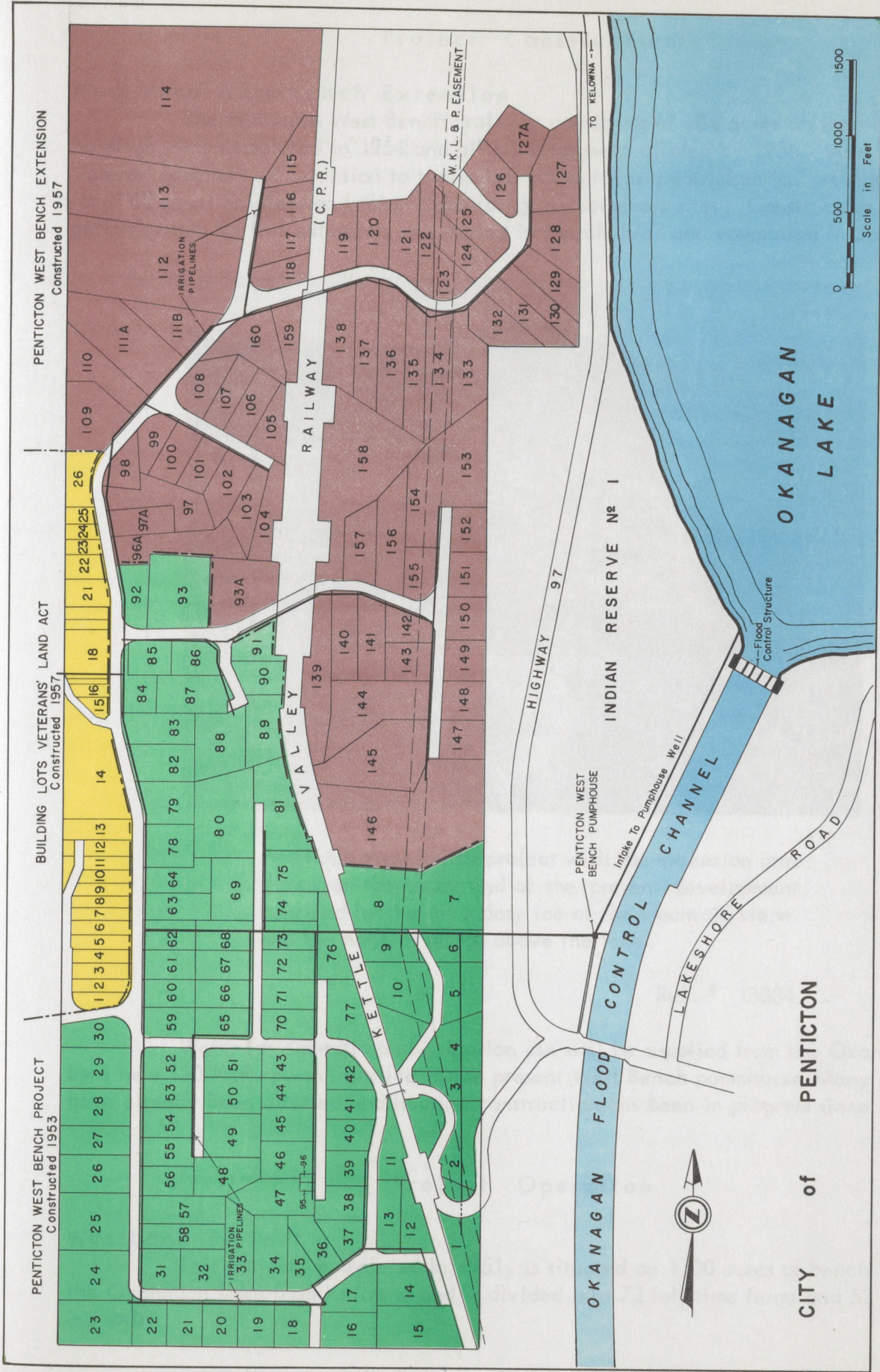
Pumping Station No.2 located about three miles from the No.1 pumping station which is on the bank of the Saskatchewan River. The No. 2 station pumps water almost ten miles to the summit of the Qu'Appelle Valley.

Ref. # 15863

#### BRITISH COLUMBIA PROJECTS

The activities of the Prairie Farm Rehabilitation Administration in the Province of British Columbia during 1957-58 were confined to the completion of project work started in 1956-57, a limited amount of project improvement work, and some investigational work for the Department of Indian Affairs, the Government of British Columbia, and the Veterans' Land Act Administration.











## Project Construction

### Penticton West Bench Extension

The Penticton West Bench Project, consisting of 204 acres divided into 94 small holdings, was completed in 1954 and all holdings were allotted by 1956. As a result of Veteran demand, an extension to the initial project was undertaken to provide an additional 69 small holdings and some 25 buildings and business sites. Construction of the irrigation system for this extension was started in March 1957 and completed in June 1957.



Penticton West Bench project with the extension area shown at the upper end of the present development, confined by the secondary toe of the mountain slope and the edge of bench above the lake.

Ref. # 13334

Water for domestic and irrigation use will be supplied from the Okanagan River by a new 150 H.P. pump installed in the present West Bench pumphouse. Many of these lots have already been allotted and housing construction has been in progress since July 1957.

## Project Operation

### Westbank Project

This project, completed in 1951, is situated on 1100 acres of bench land across the Okanagan Lake from Kelowna and is divided into 72 full time farms and 53 small holding units.

Cathodic protection was applied to this system in 1955 to protect the steel pipe line from electrolytic corrosion which occurred in scattered locations. Further corrosion was experienced in one location during 1957. This was remedied by applying higher protective voltage in that area.

## Project Investigation

### Lower Cowichan River Reclamation Project

Surveys and investigations of the lower Cowichan and Koksilah Rivers were undertaken in the summer months of 1957, at the request of the Department of Indian Affairs for the purpose of preparing a reclamation report having particular reference to the Cowichan Indian Reserve. A report on reclamation and its probable benefits to this Reserve was completed in 1957-58.

### Lillooet River Reclamation Project

This dyking and drainage development which was completed in 1951, is located in the Lillooet Valley near Pemberton, British Columbia. Some 14,000 acres of fertile agricultural land were reclaimed or protected from future flooding by the project. In view of the need of the Pacific Great Eastern Railway to replace their bridge on the Lillooet River Crossing and their willingness to change its location, the district requested some further remedial works on the river. A field reconnaissance and preliminary report of remedial work proposed and its probable benefits has been prepared on this aspect.

### Cawston Benches

This V.L.A. Irrigation project, situated on the Similkameen River benchlands, three miles from Keremeos, was completed in 1951 and consists of 624 acres subdivided into 52 full time farms.

Because of the silt pollution of the river water, and the undesirable features of the chlorinated water for domestic use, particularly in the winter time, the district has requested an investigation of the groundwater resources in that area. In December of 1957 a field examination of these sources was made by the Soil Mechanics Branch of the P.F.R.A.



## ENGINEERING SERVICES

For many of its projects P.F.R.A. requires basic information, much of which involves highly specialized knowledge and training. To supply this information, which is seldom available from outside sources, the organization has set up a number of Divisions under the general heading of Engineering Services.

### HYDROLOGY DIVISION

This Division was established for the purpose of providing basic hydrologic information for the planning, design and operation of P.F.R.A. projects. In addition, the Hydrology Division acts as the Secretariat for the Prairie Provinces Water Board for which it undertakes special studies. It also provides information for the Canadian section of certain international engineering boards established under the International Joint Commission.

The work of the Hydrology Division falls into three categories: water supply and water utilization studies for individual projects, flood potential studies for individual projects, and comprehensive studies on a watershed basis.

#### Watershed Studies

The purpose of studies on a general watershed basis is to present an over-all picture of future water supply and utilization in selected drainage basins. The following reports on the Qu'Appelle Valley Watershed were completed in 1957-58: -

- Hydrology Report #17 - Folio of Information on development in the Qu'Appelle Valley (March 1958)
- Hydrology Report #19 - Uses of water in the Qu'Appelle Watershed (March 1957)
- Hydrology Report #20 - A flood damage yardstick for the Qu'Appelle Valley (June 1957)
- Hydrology Report #21 - Floods and flooding problems in the Qu'Appelle Valley (March 1958)
- Hydrology Report #22 - Water supply and use in the Qu'Appelle Watershed (March 1958)

Watershed studies are now underway in the Pipestone Creek-Oak Lake Area, and the Upper Assiniboine River basin. The latter is being carried out in conjunction with the regional staff at Winnipeg, Manitoba. When complete, the findings will form a portion of a general P.F.R.A. report on water development possibilities on the Upper Assiniboine.

## Individual Project Studies

During the year flood frequency surveys were conducted on the Frenchman River at West Val Marie Dam, the Cowichan and Koksilah Rivers near Duncan, B.C., and on the Wiwa Creek at Braddock, Sask. Flood frequency and water supply surveys were made on Creeks at Rosthern and Grenfell and on the West Branch of Poplar River. Water supply surveys were conducted on ten individual projects in Saskatchewan and Manitoba.

## Miscellaneous

Basic work was done in 1957-58 to adapt general flood frequency analysis to prairie conditions. The object was to select suitable procedures for processing flood data for use in a study of floods in the whole prairie area. A review of the surface water possibilities at all large urban centres in the Assiniboine, Souris and Qu'Appelle basins was undertaken during the year. As in past years, the preparation of drainage maps from aerial photographs has been continued. These maps provide a ready source of drainage area information for any stream of the prairies. Other work included snow surveys for the Upper and Lower Qu'Appelle River areas made in co-operation with the Manitoba Water Resources Branch, stream flow measurements at Davin and in the Carrot River basin, and the establishing of gauges to assist in operating Dellwood Brook diversion.

As Secretariat of the Prairie Provinces Water board, preliminary work has been done to establish the frequency and the amount of runoff at any point on the prairies.

## SOIL MECHANICS AND MATERIALS DIVISION

The Soil Mechanics and Materials Division is responsible for providing technical advice on the design and maintenance of earth dams, the foundation design of structures, and the use of soils, concrete and other materials for construction purposes. To carry on these functions the Division must make detailed investigations of damsites and foundations, conduct exhaustive laboratory tests, analyse data and make appropriate design studies. For these projects under construction, control testing of soils, cement, and concrete is required, and special test apparatus must often be installed to measure the performance of dams, spillways and conduits. Performance records are kept and special studies are made to provide a guide for the improvement of design and construction procedures.

Exploratory drilling is usually the first step in investigating a new project. This provides a knowledge of the foundation soils and the availability of borrow material and concrete aggregates, and the samples of soil needed for laboratory tests. During 1957 more than 55,000 ft. of drilling was done and over 10,000 soil samples were obtained by drills operated by the Division. While much of the drilling is of a routine nature, some of it requires specialized equipment and knowledge as was the case in obtaining large samples or "cores" of the bedrock at the Waterton Damsite so that details of fracturing and stratification of the rock could be easily observed.

Except for small field laboratories located at dams under construction, all soil, cement and concrete testing is done at the main laboratory in Saskatoon. The soil testing



portion of this laboratory was moved into the new Agriculture Research Laboratory at Saskatoon in August 1957.

When testing has been completed the results are analyzed. A description of the test results obtained, the various studies made, and the conclusions reached, are usually recorded in the form of a formal report, copies of which are sent to the Chief Engineer, Design Division, and appropriate Project offices. The following damsites were investigated and reported upon in the past year: Waterton, Rivers, Cromer, Damsites in Upper Assiniboine Valley, Cypress Coulee, Dead Horse Coulee, Bluefield, Black Eagle, Seine River Diversion, Neepawa, Mary-Jane Creek, and Antler River. Various other damsites still under investigation are South Saskatchewan River Sites 8 and 10, Sounding Creek, Red Deer and Antelope Syphon.



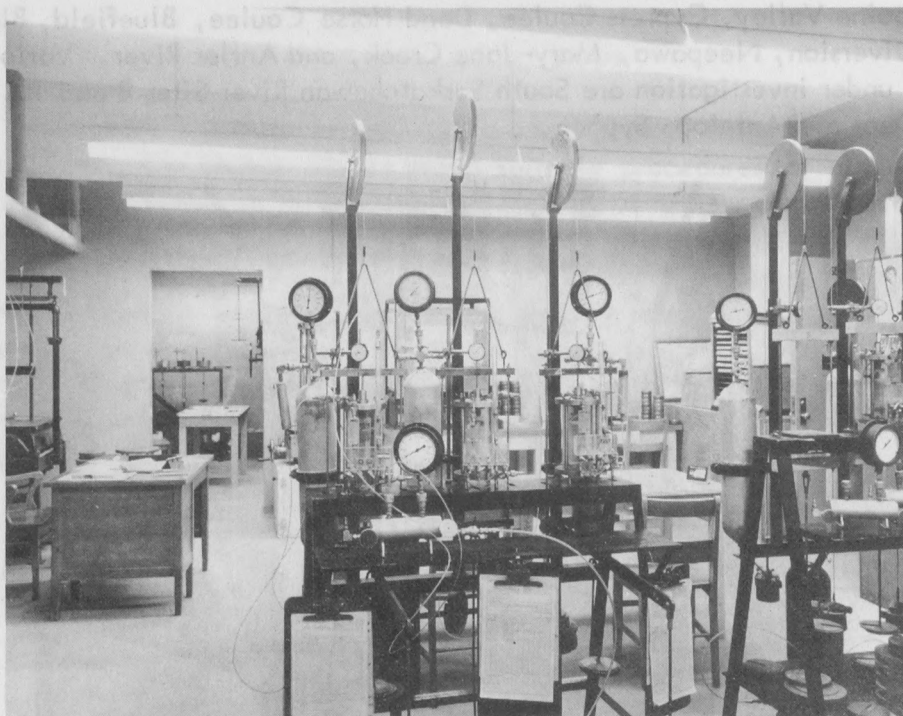
One of the drills operated by Soil Mechanics and Materials Division being used to obtain 36 inch diameter samples of bedrock at the Waterton Damsite.

Ref. # 15058

During the year the following projects were provided with field testing and control pertaining to soils and concrete: Boundary Dam, Belly River Weir, Lafleche Dam, Rock Lake Dam, Canal - Belly River to St. Mary Reservoir, East Ridge Dam, Jensen Reservoir Spillway, Larsen Dam, and Morden Spillway. Field inspections with some investigations and advice was provided for a number of smaller projects.

Some work was also done for other government departments involving found-

ation investigations for proposed structure sites. Work was also continued on a number of practical research problems such as swelling clay-shales, canal lining materials, western concrete aggregates, flexible metal conduits, winter concreting and structures on highly plastic clay. A new research project dealing with the frost heaving of structures was begun during the year. As in the past, the results of studies on research problems have also been made available to other departments and interested people by means of direct discussions, correspondence, and the publishing of reports and technical papers.



A portion of the new Soil Mechanics Laboratory in Saskatoon showing apparatus used for measuring the shear strength of soil samples.

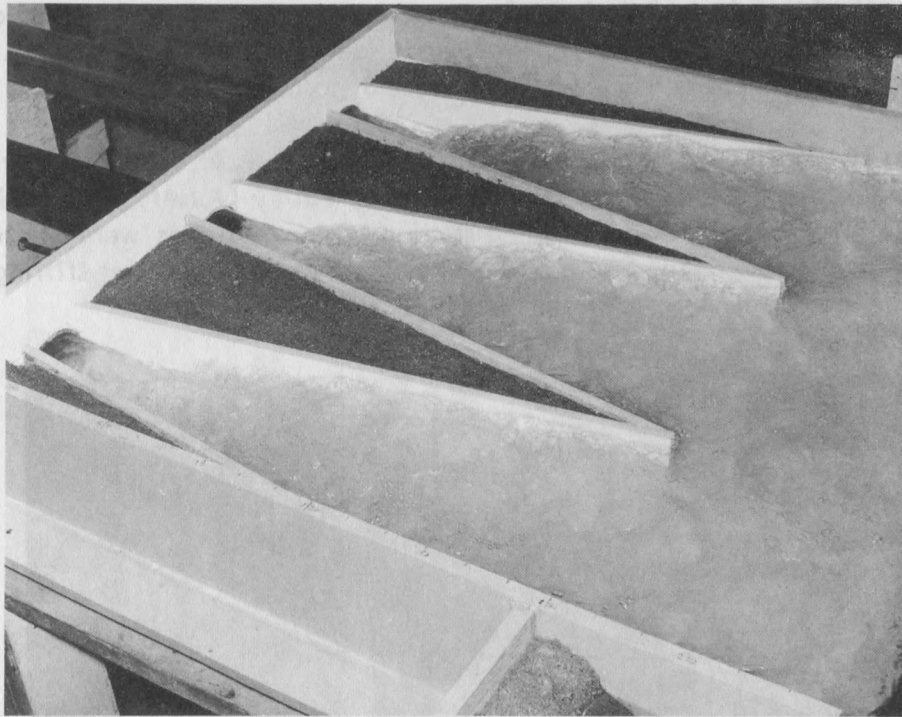
Ref. # 15057

## DESIGN DIVISION

The Design Division is responsible for all major engineering, planning and design work for all P.F.R.A. divisions and services. Certain engineering components of projects are done by other divisions giving engineering services, and this information is used by the Design Division in its own work, or integrated as supplied, into the completed design.

The engineering success of water-carrying structures is heavily dependent upon information gathered in regard to the hydraulic behaviour of structures obtained from scale model testing under actual flow conditions. For this purpose, the Design Division operates a modest but well equipped hydraulic laboratory in Regina.





Model test of the Outlet structure for the South Saskatchewan River Diversion Tunnel.

Ref. # 15875

The major engineering design work done during 1957-58 included projects designed with construction in progress or completed, and design work on projects and structures to determine engineering and economic feasibility. Design work was done for 12 projects under construction during the year and complete design plans were prepared on 6 projects not yet constructed. Design engineering services were also provided for 12 other P.F.R.A. projects.

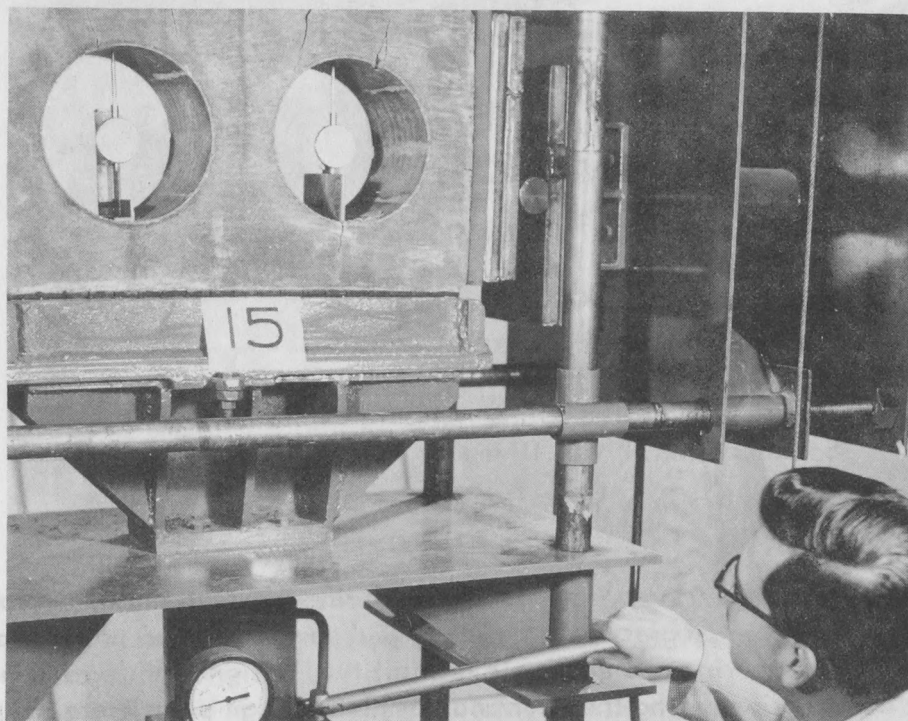
The Design Division prepared drawings of standard dwellings for Community Pastures, plans of facilities for handling livestock, and a considerable number of pasture maps.

The Division also designed and supervised the construction of a large steel and brick P.F.R.A. warehouse in Regina which was completed in 1957.

Design engineering services were continued in 1957 on contracts awarded by the Alberta Government for the Bow River Project. In Saskatchewan, reappraisal work was carried out on the South Saskatchewan project in collaboration with engineers of the Saskatchewan Power Corporation. A considerable amount of design work and engineering studies were undertaken on the headwaters of the Upper Assiniboine River system, with complete designs being prepared for the Stove Creek Dam and Preeceville Dam, and the preliminary engineering work being completed for the Hazel Dell Dam and the McGregor Dam.

Standard drawings of designs of a recurring nature were maintained as in previous years. The ozalid printing service was made use of by all divisions of P.F.R.A. and during the year approximately 155,000 square feet of prints were produced.

The Hydraulics laboratory constructed scale models of a portion of the South Saskatchewan River project, a model of the Crawling Valley Outlet, and continued model studies of wall heights for level and sloping stilling basins. Studies were started on culvert inlets. A model test of the South Saskatchewan River tunnel outlet stilling basin was conducted to determine design requirements of this structure.



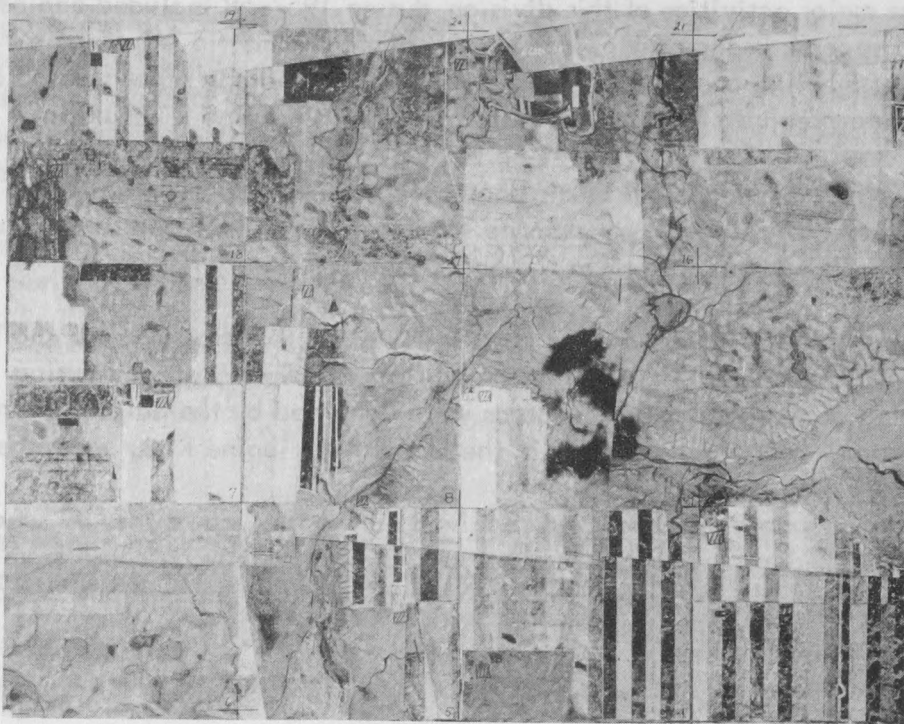
Testing apparatus for scale models of reinforced concrete conduits, showing a Design engineer reading gauges for pressure and deformations.

Ref. # 15870

## AIR PHOTO ANALYSIS AND ENGINEERING GEOLOGY DIVISION

The services of the Air Photo Analysis and Engineering Geology Division fall into two main categories. The first is the provision of both qualitative and quantitative data derived from air photos. Included in this is the detailed interpretation and analysis of air photos, the compilation of plans by photogrammetric techniques, the maintenance of an air photo library for the convenience of all divisions and sections of P.F.R.A., and the supplying of mosaics to field personnel. The second responsibility is the provision of geologic information to assist in the investigation and design of major P.F.R.A. projects. This information includes data relating to the origin and history of valleys, and the engineering properties, origin, and mode of deposition of geologic materials.





Air photo studies of comparative mosaics in different years indicate changes in the drainage pattern, flooded area, agricultural methods and alkali accumulation. Note cloud shadow near centre of the above mosaic. (1938 photo)

Ref. # 15873



Same area as above. (1955 photo)

Ref. # 15874

The major activities of this division during 1957-58 included engineering geology reports, reconnaissance air photo studies, photogrammetric mapping, air photo library work and the assembling of mosaics. Three engineering geology reports based on field investigations were prepared for damsites in the Upper Assiniboine River basin.

By office examinations of air photographs, six photo reconnaissance reports were completed during 1957-58, five for dams site locations in five different areas, and one of surface features, soils and vegetation in the San Clara Community Pasture.

Reports on the accuracy and costs involved of topographic mapping by use of the Balplex, Multiplex and other projection equipment, were prepared during 1957. Topographic mapping of proposed reservoir areas were compiled by the Balplex Plotter on eleven proposed damsites, most of which were in the Upper Assiniboine River watershed.

New air photo coverage was received during the year either by special agreement with the Inter-departmental Committee on Air Surveys, by purchase from the National Air Photo Library in Ottawa, or by contract with private air photography companies. The following coverage was obtained: -

Shell River area	-	1700	square miles
Upper Shell River area	-	110	" "
Big Boggy Creek area	-	24	" "
Central Alberta area	-	3400	" "
Cowichan Indian Reserve	-	25	" "
Interlake area of Manitoba	-	125	" "

During the year, 159 standard township mosaics were constructed for various purposes. This brings the total available to March 31, 1958 to 1044. Several semi-controlled project mosaics were constructed for special purposes. These included the proposed South Saskatchewan River project Site 10, and the alternative Site 8, the Cowichan Indian Reserve, the northeast shore of Buffalo Pound Lake and seven Community Pastures.

Many studies of lesser magnitude were carried out during the year. Most of these involved office air photo studies making a selection and assessment of sites for small dams and structures. Also carried out were quantitative studies employing air photos to measure lake areas, flooded areas, drainage basins, cultivated and bushed areas. Several air photo studies were made to locate deposits of sand, gravel and riprap for construction materials.

## DRAINAGE DIVISION

Soil salinity is a problem experienced in many areas in Western Canada. Without proper drainage on irrigated land, the salt and water content of the soil soon builds up to a point where the land becomes unproductive. The Drainage Division of the P.F.R.A. was organized in 1949 to investigate and find solutions to the drainage and alkali problems arising on P.F.R.A. irrigation projects.



During the development of irrigation projects, the Drainage Division works closely with other services on the location of canals, on problems associated with canal seepage, and on the location and types of drains for specific soil types. In addition, through special surveys and experimental work, this Division obtains information for maintenance and reclamation of irrigated land.

The activities of the 1957-58 season included investigations, surveys, construction and reclamation work on the Bow River and St. Mary Projects in Alberta and the Eastend, Maple Creek and Swift Current Irrigation Projects in Saskatchewan.

### Bow River Project

#### Farm Use of Water

Studies were continued in co-operation with the Experimental Farms Service to determine the actual farm use of irrigation waters and to obtain a comparative value of irrigation efficiency. The fourth year of study indicated again that water applications were too large and often too few during the growing season, with each irrigation exceeding the soil root-zone storage capacity. As a result, irrigation efficiencies are low even on levelled land.

#### Groundwater Observations

The reading of permanent piezometers installed in the Vauxhall area in 1951 showed a slight upward trend in the groundwater levels as compared to 1956 readings. Observation wells were installed in the Drain 1 area to provide groundwater information to aid in planning reclamation measures for that area. Investigations were continued to check the effectiveness and influence of the tile drains. Generally, the tile drains are maintaining the water table at a desirable depth. Discharge flows during the year range from 3 to 200 gallons per minute.

#### Drainage Surveys

Drainage surveys were made on Drains 1 and 9 to locate and record elevations of piezometers, observation wells, and drill holes. Location and profile surveys of tentative drains were completed during the year. Topographic mapping and location surveys of soil test holes were made in conjunction with land classification surveys in the Vauxhall, Taber and Tempest areas. Topographic surveys were completed on four parcels of land in the Hays area, and location and profile surveys were made on Distributary "U". Miscellaneous surveys were conducted at various locations to assist with drainage problems in those areas.

#### Land Levelling

Land Levelling surveys were completed on approximately 361 acres for 10 farmers in the Vauxhall area. In addition, surveys, plans and construction were completed on 160 acres of government owned land, and on 11.5 acres at the Lethbridge Experimental Station. A yield and land use survey was conducted in August 1957 on previously levelled land.

Fertility and bacteriological studies have been made in the laboratory on field soil samples from levelled fields to assess the problems of restoring them to full production. Greenhouse trials using soils from cut areas, show the greatest increase in plant growth with the use of barnyard manure plus ammonium phosphate fertilizers.

### Distributary "U"

Investigations started in 1955 to determine cultural and irrigation practices necessary to bring the area under sustained irrigation agriculture were continued. The 1957 program was extended to include 2 fields irrigated by the sprinkler method in addition to the 2 fields which were previously levelled and basin irrigated.

The possibility of using sub-surface irrigation was further investigated. Experience on the two levelled fields show that a combination of surface and subsurface irrigation can reduce the requirements to one or two applications when the water table is held at approximately 3 feet during the growing season.

Six irrigations were necessary on the sprinkler irrigated fields in 1957. The water holding capacity of the sandy soils is considered to be about 1 inch per foot of soil depth. This meets the minimum standards usually required in this respect.

When other factors including soil management problems, and the distribution and drainage layout are considered further in project planning, it is unlikely that the area will be considered feasible for irrigation development. Soil investigations were made on Lateral Y and P as these areas are being considered for irrigation.



Leaching experiments at Vauxhall using shallow tile drain plots. Drain outlets are at the left side of the picture.

Ref. # 14368



### Drainage Investigations

Leaching studies were continued during 1957-58 in an area which had limited production over the past years due to salinity and poor surface drainage. The use of dykes to pond water and the addition of gypsum are being tested in this area. The practicability of shallow tile drains in medium textured soils with dense subsoils is also being tested by the Drainage Division.

### Dugout Investigations

A total of 56 dugout sites were located in the Vauxhall and Hays areas during 1957-58. Compacted earth lining was recommended for 5 of these dugouts. These were lined by project staff and showed negligible losses during the 6 month interval they contained water.

### Irrigation and Drain Water Studies

Testing of irrigation water throughout the Bow River Project for salt content was extended in 1957 so that coverage was obtained from the Carseland Diversion to Ronalane Spillway. It was again found that the salt concentration of the irrigation water increases considerably as it passes through the reservoirs, particularly the Little Bow Reservoir.

As in previous years the salt concentration in the drain waters tends to vary with the flow. Flow rates up to 150 gallons per minute were recorded from some tile drains. The salt concentration of waters from tile drains is higher than that of water from open drains.

## St. Mary Irrigation Project

### Soil and Water Investigations

A small area of the Lethbridge Experimental Farm was investigated to determine the suitability of soils for levelling.

The Lethbridge P.F.R.A. Office and the Provincial Irrigation Extension Service collected water samples throughout the St. Mary Project for analysis. There was a slight increase in salt content toward the eastern section of the project, but the water is of good quality for irrigation. This water was somewhat lower in salt and sodium content than waters used on the Bow River Project.

## Eastern Irrigation District

### Soil and Water Investigations

Measurements of groundwater levels and salt content at selected sites, were begun late in 1957. Results to date show considerable variation in salt content of the groundwater indicating a variation in the salt content of the underlying soils.

Water quality throughout the project shows very little change in salt content. This is in contrast to the waters of the Bow River and St. Mary projects which tend to pick up salt in the reservoirs.

## Saskatchewan Irrigation Projects

### Soil and Water Investigations

The results of the soil sampling carried out in the Rush Lake area of the Swift Current project are being analyzed in order to outline the boundaries of the salinity classes.

In co-operation with the Swift Current P.F.R.A. office, water samples were collected from the various irrigation projects in southwestern Saskatchewan. In all cases the water was considered satisfactory for irrigation purposes.



## CONSTRUCTION, EQUIPMENT AND SUPPLY DIVISION

The extent of P.F.R.A. and major project activities outlined in this report obviously require equipment, supplies and services of various kinds. The function of the Construction, Equipment and Supply division is to provide all branches of the organization with the requirements which they are not providing for themselves and which cannot be obtained, or are difficult to obtain from local sources. The division administers the vehicle fleet, maintenance equipment, camp equipment, fire prevention and safety program and the inventory of equipment and buildings. It operates a building material stores and provides a purchasing service for all branches of P.F.R.A. It provides, and supervises, maintenance and construction crews for work which cannot be done on a local contract basis. This work is required on irrigation and water storage projects, on community pastures operated by P.F.R.A. or on community water storage projects which are maintained and operated by P.F.R.A. for a period after initial construction.

Vehicles used by the organization include over 300 cars, trucks and jeeps. These are allocated to various divisions and projects according to their needs. Most of the routine maintenance of vehicles is done by local garage facilities in the area in which the vehicle is operated. Some major overhaul work is done in a well equipped vehicle repair shop at Moose Jaw. Much of the repair work of vehicles used on the Bow River project is done in the shop at Vauxhall. The useful life of vehicles varies according to the type of vehicle, the nature of the work on which it is used, and the effectiveness of the maintenance it has received, but the objective is to operate cars and trucks at least 60,000 miles before replacement. Many four wheel drive vehicles which are not used for long distance travel will not reach this mileage before replacement becomes necessary while some of the larger truck units often exceed 100,000 miles with relatively low maintenance costs. When a vehicle is to be replaced it is offered as a trade-in on a specified type of vehicle and tenders are invited from dealers in the area where the vehicle has been or is expected to be operated.

During the past year the shops in Moose Jaw carried out repair and maintenance work on over 100 units of construction type equipment such as crawler tractor, pumps and concrete equipment. Equipment used for operation and maintenance work on the Bow River Project is based at Vauxhall, Alberta, where a project shop is equipped to do most of the necessary equipment repairs.

Repairs and modifications were made to camp trailers and equipment, and in addition, ten new units were built to replace old units which were no longer serviceable. Field crews are housed in camp trailers which are equipped to provide sleeping quarters, kitchen, dining and washroom facilities as required. These camp units, built in the shop during winter months, help provide winter employment for some field staff.

The extensive and varied nature of the work undertaken by P.F.R.A. necessitates considerable structure maintenance each year. Many structures built fifteen to twenty years ago require renewal and newer structures sometimes need modification to better perform their intended function. Any new or replacement work is done, as far as possible, in a manner which will reduce future maintenance costs to a minimum and enable the works to be operated with basic operating personnel. This program of renewal and renovation entails the use of reinforced concrete, steel, pressure treated timber and associated materials.

While some of these works can be undertaken by standard contract there are many others, frequently in remote locations and often relatively small in size, that local contractors are not equipped to undertake, and which are not of interest to larger contractors at a reasonable cost. This type of job is being done effectively with well organized and equipped crews of P.F.R.A. personnel. These crews are generally self contained and can move from place to place with basic personnel and equipment and add local manpower as the need arises. Some local equipment can also be hired for many of these jobs so that the maintenance crew need have only those items not available in the district.

During the past year crews of this nature undertook more than 90 different jobs ranging in size from the use of a dragline for a few hours to replacing a damaged spillway involving a labour crew of up to 30 men over a four month period.



P.F.R.A. construction equipment replacing the Russell Creek spillway. Pouring enclosure and batching set-up used for running cement following a heavy snow-storm late in October 1957.

Ref. # 14289

The improvement work in the community pastures requires a number of special jobs such as land clearing, cleaning out springs for water supply and building water control structures. The problem of providing fireguards in the prairie pastures is a continuing one with more than 700 miles being done with motor grader equipment last year.

While operational work of this nature requires a basic staff of skilled men who receive experienced supervision, it has not been necessary to expand the number of con-



tinuing employees beyond the crew foremen and key machine operators. These men are employed during the winter months in equipment repair and winter construction work, and are supplemented by season employees as the need arises.

A fire prevention and safety program is carried on throughout the whole organization with regular inspection by an experienced and qualified supervisor. All community pasture headquarter buildings are inspected and reported on at least once each year. Mobile field camps are inspected several times during the summer season, usually when a camp is moved from one area to another. The number of on-the-job accidents has been relatively few and no serious building fires occurred during the year although the effect of the fire prevention program obviously prevented some minor incidents becoming major accidents.

## PLANNING AND INFORMATION DIVISION

The Planning and Information Division was established in 1949 to provide planning and information, library and photographic services to all branches and divisions of the Organization.

The principal duty of this section is to collect and assemble factual information pertaining to the history and development of P.F.R.A. projects for use as a guide in future planning and in the preparation of reports and publications required for public distribution. Included in this work is the preparation of progress and summary reports on P.F.R.A. projects; the preparation of the P.F.R.A. Annual Report; and the preparation of annual reports on P.F.R.A. activities used in the Annual Report of the Minister of Agriculture, and the Canada Year Book. In addition, it involves preparing and editing material on P.F.R.A. activities used in articles appearing in technical journals, magazines and newspapers; filling requests for information on P.F.R.A. activities from schools, government and private agencies, and research institutions; and carrying out special research assignments as required by the Director or other divisions of P.F.R.A.

The section is also called upon at times to represent P.F.R.A. on special departmental and inter-departmental committees, act as secretary at meetings arranged by P.F.R.A., and handle arrangements for public events.

A further activity of the section is to be responsible for arranging the program and itinerary of visitors to P.F.R.A. from other parts of Canada and from other countries. During the past year several Columbo Plan students, in addition to other visitors, were given an opportunity to become familiar with the various phases of rehabilitation and reclamation work carried out by P.F.R.A.

The Planning and Information Division also supervises the operations of the P.F.R.A. Library and Photographic Section in Regina. The principal responsibilities of the Library include the ordering and distribution of books, periodicals, and publications required by P.F.R.A. headquarters or field offices; the maintaining of a record of all books, publications and government documents held by P.F.R.A. either in the central library in Regina or in division or field offices; and the filing of pamphlets, bulletins, reports and books of particular interest in P.F.R.A. work as a ready reference for all members of the organization. The library also provides an inter-library loaning service to the divisions, branches and offices of P.F.R.A. as well as other Federal Department of Agriculture offices in Regina, Indian Head and Swift Current.

The Photo Section provides photographic services to all divisions and branches of P.F.R.A. and also to other Federal Government Departments in Regina and Indian Head. It also assumes responsibility for the care of P.F.R.A. photographic equipment, and maintains a complete file of pertinent P.F.R.A. black and white prints, negatives, and colour slides.

The production in this Section has been increasing over the past few years. Over 900 requests were received for various types of photographic work during the past year. This work involved the developing of about 250 rolls of film, the making of over 2100 copies, the printing of some 21,464 black and white pictures varying in size from 4" x 5" to 16" x 21",



the copying and printing of around 1000 mosaics and the mounting of over 6000 prints.

During the year emphasis in the photographic program was given to the photo coverage of agricultural development taking place on irrigation projects both in Saskatchewan and Alberta. In addition, a photo record was kept on the projects completed or under construction during the 1957-58 season. At the first of the year the Planning and Information Division gave special attention to establishing an active filing system for some 17,000 black and white prints and a corresponding file for approximately 3000 colour slides. These files not only greatly expedite the handling of photographic material in Regina but also serve as a basis for filing photographs in branch offices.



Printing room of the P.F.R.A. Photographic Section showing enlargers, contact printer and print developing facilities.

Ref. # 15872

In addition to the routine duties performed by the Planning and Information Division, a summary record was maintained of all projects submitted for authorization, and progress and summary reports were kept on projects currently under construction or recently completed.

Numerous separate requests for information on the work and program of P.F.R.A. were handled during the year by this Division. These requests were received from educational institutions, newspaper and magazine publishers, Government Departments in Canada and abroad, and private individuals living in all parts of Canada and in other countries.

# APPENDIX I

## PRAIRIE FARM REHABILITATION ACT

Showing number of projects and amount of financial assistance paid since the inauguration of program to  
March 31, 1958

Province & Classification	DUGOUTS			STOCKWATERING DAMS			IRRIGATION SCHEMES			TOTALS		
	Projects Paid	Financial Assistance Paid		Projects Paid	Financial Assistance Paid		Projects Paid	Financial Assistance Paid		Projects Paid	Financial Assistance Paid	
MANITOBA												
Individual	10,683	1,058,739.60	311	23,032.91	140	40,159.73	11,134	1,121,932.24				
Neighbor & Community	47	9,282.04	26	20,449.43	8	2,212.62	81	31,944.09				
Total	10,730	1,068,021.64	337	43,482.34	148	42,372.35	11,215	1,153,876.33				
SASKATCHEWAN												
Individual	29,658	3,304,161.76	4,208	361,412.78	2,106	479,636.71	35,972	4,145,211.25				
Neighbor & Community	451	186,096.77	143	99,197.97	92	38,727.15	686	324,021.89				
Total	30,109	3,490,258.53	4,351	460,610.75	2,198	518,363.86	36,658	4,469,233.14				
ALBERTA												
Individual	4,934	508,673.67	2,180	206,543.42	1,001	237,401.21	8,115	952,618.30				
Neighbor & Community	40	13,162.71	45	28,337.61	21	13,415.77	106	54,916.09				
Total	4,974	521,836.38	2,225	234,881.03	1,022	250,816.98	8,221	1,007,534.39				
GRAND TOTAL	45,813	5,080,116.55	6,913	738,974.12	3,368	811,553.19	56,094	6,630,643.86				



APPENDIX II  
Progress by Years in the Construction of Small Projects P.F.R.A. Water Development Program  
1935 to March 31, 1958

Fiscal Year	Number of Projects Constructed			Financial Assistance Paid on Projects				TOTAL
	(1) DO	SWD	IRR	DO	SWD	IRR	TOTAL	
1935-36	49	28	5	1,558.53	2,374.04	869.51	4,802.08	
1936-37	859	465	101	41,053.44	36,022.13	17,608.74	94,684.31	
1937-38	1,493	850	215	105,293.19	83,287.75	41,419.06	230,000.00	
1938-39	2,745	855	178	283,445.40	105,998.08	29,493.11	418,936.59	
1939-40	1,023	193	44	166,836.34	65,785.92	6,419.91	239,042.17	
1940-41	4,433	877	232	529,350.72	86,515.21	37,244.38	653,110.31	
1941-42	2,773	447	115	288,754.54	36,890.14	18,987.16	344,631.84	
1942-43	1,275	174	44	120,049.61	13,755.46	5,759.93	139,565.00	
1943-44	1,073	202	32	103,918.24	17,625.54	5,812.26	127,356.04	
1944-45	3,119	221	38	339,064.47	20,704.26	5,257.78	365,026.51	
1945-46	4,316	261	28	489,782.13	27,752.56	4,685.28	522,219.97	
1946-47	4,945	194	48	581,172.05	19,549.87	8,697.82	609,419.74	
1947-48	1,804	226	56	202,443.78	22,256.56	8,797.00	233,497.34	
1948-49	1,505	193	62	167,718.66	20,983.66	12,993.82	201,696.14	
1949-50	3,020	145	111	354,582.32	13,715.64	29,742.83	398,040.79	
1950-51	3,432	472	716	400,960.36	49,522.08	203,979.40	654,461.84	
1951-52	473	96	343	55,172.10	10,146.32	109,556.66	174,875.08	
1952-53	861	119	288	100,219.54	13,382.92	92,397.46	205,999.92	
1953-54	1,774	178	181	204,148.93	18,373.83	46,550.99	269,073.75	
1954-55	1,300	234	180	149,184.48	24,751.11	44,473.20	218,408.79	
1955-56	493	145	104	56,733.44	15,028.46	23,236.94	94,998.84	
1956-57	850	126	98	93,930.68	13,932.33	23,620.24	131,483.25	
1957-58	2,198	212	149	244,743.60	20,620.25	33,949.71	299,313.56	
TOTAL	45,813	6,913	3,368	5,080,116.55	738,974.12	811,553.19	6,630,643.86	

(1) DO - Dugout      SWD - Stock Watering Dam      IRR - Individual Irrigation Project

APPENDIX III  
WATER DEVELOPMENT - IRRIGATION PROJECTS - STORAGE - COMMUNITY PROJECTS  
To March 31, 1958

MANITOBA

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Alexander Soil Conservation	Alexander	Soil Conservation	1944	-	-	5,250.00
Birtle Dam	Birtle	Stockwatering	1947	-	-	11,490.00
Boissevain	Boissevain	Storage	1954	-	580	29,992.00
Brandon Flood Irrigation	Brandon	Flood Irrigation	1949	1,000	-	27,107.00
Brandon Water Supply	Brandon	Storage	1940	-	500	3,996.00
Clearwater Storage	Clearwater	Stockwatering	1938	-	12	5,949.00
Crystal City Storage	Crystal City	Stockwatering	1935	-	3	3,334.00
Dead Horse Creek Dam	Morden	Irr. & Stockwatering	1941	100	1,200	344,274.00
Dead Lake Community	Gladstone	Irr. & Stockwatering	1950	20	90	1,933.00
Deloraine	Deloraine	Stockwatering	1953	-	1.5	770.00
Edwards, R. M. of	Melita	Stockwatering	1935	-	100	10,214.00
Hague Dam	Sanford	Stockwatering	1953	-	-	29,183.00
Hampson Dam	Sanford	Storage	1954	-	420	16,899.00
Hartney	Hartney	Irr. & Dam	1941	-	-	10,264.00
Killarney	Killarney	Multi-purpose Res.	1956	-	800	41,965.00
LaSalle River Dams	LaSalle	Stockwatering	1941	-	900	22,989.00
Lewko Dam	Sanford	Storage	1954	-	320	20,874.00
Little Souris River Dam	Melita	Stockwatering	1945	-	250	1,380.00



Name of Project	Location	Type of Project	Complete	Irr. Ac.	Stor. Cap. Acre Feet	Costs
McAuley Community Dam Melita	McAuley Melita	Stockwatering Irr. & Dam	1955 1941	- 3,900	20 3,200	2,051.00 11,372.00
Minnedosa Dam	Minnedosa	Storage	1950	20	1,500	105,051.00
Morris River - Rock Lake	Carman	Stockwatering	1940	-	10,000	23,401.00
Napinka	Napinka	Irr. & Dam	1941	-	-	6,770.00
Oak Lake	Oak Lake	Irrigation	1956	13,000	-	119,205.00
Park Lake	Neepawa	Stockwatering	1953	-	-	21,626.00
Plum Coulee	Plum Coulee	Multi-purpose Res.	1957	-	12	5,939.00
Roland	Roland	Stockwatering Dugout	1957	-	1.5	1,000.00
Rosebank Dam	Rosebank	Stockwatering	1948	-	32	12,161.00
Roseau River Dam	Dominion City	Multi-purpose Res.	1957	-	-	54,705.00
Shoal Lake Project	Shoal Lake	Stockwatering	1948	-	3,500	8,491.00
Souris Dam	Souris	Multi-purpose Dam	1952	-	150	73,597.00
Souris, Town of	Souris	Stockwatering	1935	-	150	3,841.00
St. Lazare Storage Reservoir	Lazare	Stockwatering	1948	-	5	1,470.00
Turtle Mountain Reservoir	Boissevain	Multi-purpose Res.	1956	70	600	11,968.00
Waskada	Waskada	Stockwatering	1953	-	1.5	853.00
Wawanesa	Wawanesa	Irr. & Dam	1941	-	-	125,332.00
Westbourne, R.M. of	Gladstone	Stockwatering	1947	-	-	5,993.00
Whitemud River	Woodside	Stockwatering	1949	-	160	6,506.00
Whitemud River Storage	Gladstone	Stockwatering	1943	-	660	11,464.00
SASKATCHEWAN						
Aberdeen, R.M. of	Aberdeen	Dugout	1955	-	1.5	916.00
Adair Creek	Wolseley	Multi-purpose Dam	1956	40	350	59,849.00
Adam's Lake	Battle Creek	Irrigation	1936	1,500	2,000	8,831.00

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Admiral Storage Dam	Admiral	Irr. & Stockwatering	1949	2,000	2,200	38,520.00
Airdale	Senlac	Dugout	1955	-	1.5	859.00
Allan	Allan	Stockwatering	1948	-	300	4,477.00
Alpine	Senlac	Dugout	1956	-	1.5	877.00
Alticane	Richard	Stockwatering	1951	-	2.5	858.00
Amsterdam	Amsterdam	Stockwatering Dugout	1957	-	1.5	629.00
Arcola	Arcola	Stockwatering	1939	-	(underground)	17,310.00
Arena	Arena	Irr. & Stockwatering	1949	1,600	3,200	5,218.00
Artland Grazing	Marsden	Dugout	1955	-	1.5	1,000.00
Avon Heights Grazing Co-op.	Shaunavon	Stockwatering	1955	-	60	2,428.00
Avonhurst	Qu'Appelle	Stockwatering	1956	-	1.5	3,200.00
Baildon and Tilney	Baildon	Stockwatering	1950	-	4	780.00
Balcarres	Balcarres	Stockwatering	1948	-	100	7,203.00
Balcarres Storage	Balcarres	Stockwatering	1953	-	20	10,294.00
Bateman	Gravelbourg	Irr. & Stockwatering	1949	400	114	4,739.00
Battleford	N. Battleford	Irrigation (pump)	1941	800	-	3,058.00
Beadle	Beadle	Stockwatering	1949	-	2	997.00
Beaver Creek	Hanley	Stockwatering	1951	-	200	7,998.00
Beechy #1	Beechy	Irr. & Stockwatering	1946	600	1,000	12,746.00
Beechy #2	Beechy	Irr. & Stockwatering	1948	200	100	6,240.00
Beechy Co-op.	Beechy	Stockwatering Dugout	1957	-	1.5	1,000.00
Bengough	Bengough	Stockwatering Dugout	1957	-	1.5	1,000.00
Big Arm Storage	Liberty	Irr. & Stockwatering	1939	5,000	5,200	13,161.00
Black Hills Grazing Co-op.	Piapot	Dugout	1955	-	5	2,520.00
Boharm	Boharm	Stockwatering	1948	-	100	6,250.00
Boharm Community Dugout	Boharm	Multi-purpose Res.	1956	-	1.5	998.00
Bracken	Bracken	Stockwatering	1946	-	158	1,001.00
Braddock Dam	Braddock	Irrigation	1952	2,000	1,600	83,999.00
Bright Water Creek	Hanley	Irrigation	1956	2,500	3,500	11,713.00
Brock Community	Brock	Stockwatering	1949	-	2	951.00
Brown Hill	Grenfell	Multi-purpose Res.	Incomplete	-	275	7,394.00
Buffalo Pound	Qu'Appelle Valley	Irrigation	1940	x	-	83,723.00



Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Cabri	Cabri	Stockwatering	1948	-	340	37,553.00
Cactus Lake	Cactus Lake	Stockwatering	1949	-	2	730.00
Cadillac	Cadillac	Irrigation & Dam	1945	800	1,350	32,887.00
Camberley	Camberley	Irrigation & Dam	1950	-	100	2,106.00
Canora	Canora	Storage	1941	-	300	16,128.00
Carleton, Hamlet of	Carleton	Dugout	1955	-	1.5	998.00
Caron	Caron	Storage	1948	-	100	17,109.00
Caron Community (Dam)	Centre Caron	Stockwatering	1949	-	4	697.00
Caron Water Development	Thunder Creek	Storage & Dam	1944	-	43,500	710,433.00
Cedoux	Cedoux	Stockwatering	1947	-	314	4,999.00
Ceylon Reservoir	Ceylon	Irrigation & Dam	Incomplete	300	250	6,396.00
Chapleau Lake	Montmartre	Stockwatering	1949	-	3,530	8,208.00
Clair Creek	Wadena	Flood Irrigation	Incomplete	100	-	1,877.00
Claydon	Claydon	Multi-purpose Res.	1957	-	30	2,498.00
Clearfield	Goodwater	Irrigation & Dam	1951	70	300	5,999.00
Coleville	Coleville	Stockwatering Dugout	1957	-	1.5	805.00
Conquest, Village of	Conquest	Dugout	1954	-	1.5	1,000.00
Consul - Vidora	Vidora	Irrigation	1950	3,000	-	62,500.00
Coronach	Coronach	Irrigation & Dam	1947	300	1,450	97,807.00
Crane Valley	Viceroy	Stockwatering	1950	-	2	599.00
Craven Dam	Qu'Appelle Valley	Irrigation	1943	x	-	33,675.00
Crooked & Round Lake	Qu'Appelle Valley	Irr. & Water Control	1941	x	-	48,650.00
Cut Knife	Cut Knife	Stockwatering	1950	-	5	280.00
Cypress Storage	Ravenscrag	Storage for Irrigation	1939	20,000	80,000	467,691.00
Dalmeny	Warman	Stockwatering Dugout	1957	-	1.5	994.00
Dalmeny	Dalmeny	Stockwatering	1951	-	3	1,000.00
Davidson	Davidson	Irrigation & Dam	1937	100	277	3,114.00
Davin	Kronau	Stockwatering	1947	-	1,080	13,501.00
Dead Lake	Macoun	Irrigation & Dam	1941	-	Souris River Development	17,528.00
Delisle	Delisle	Stockwatering	1950	-	45	4,899.00
Denzil	Macklin	Stockwatering	1951	-	2	975.00

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Doddsland	Druid	Stockwatering Dugout	1957	-	1.5	805.00
Doonside Dam	Wawota	Irrigation	1955	1,500	1,500	3,438.00
Dry Lake	Forward	Stockwatering	1949	-	600	9,729.00
Dunn & Watt	Mankota	Irrigation	1937	305	-	2,996.00
Dunning	Radville	Irrigation	1951	120	200	3,566.00
Dummer	Milestone	Irrigation & Dam	1949	500	200	4,742.00
Eagle Hill Creek	Plenty	Stockwatering	1946	-	10,700	6,432.00
Eagle Lake	Coleville	Irrigation & Dam	1949	2,000	3,000	5,998.00
East Borden	Borden	Stockwatering	1950	-	60	526.00
East Manitou	Nielburg	Dugout	1953	-	1.5	789.00
Eastend	Eastend	Irrigation	1939	4,000	1,300	161,682.00
Eastview	Eastview	Stockwatering	1949	-	200	5,970.00
Eatonia	Eatonia	Stockwatering	1949	-	12	1,199.00
Echo Lake	Qu'Appelle Valley	Irrigation	1943	x	-	41,753.00
Egg Lake	Avonhurst	Multi-purpose Res.	1957	800	-	3,979.00
Elfros	Elfros	Stockwatering	1949	-	25	7,330.00
Elrose	Elrose	Stockwatering	1950	-	5	999.00
Eston	Eston	Stockwatering	1954	-	10	11,469.00
Fahlman's Creek Project	Balgonie	Stockwatering	1949	-	400	15,599.00
Fairy Hill	Qu'Appelle Valley	Irr. & Water Control	1941	x	-	4,302.00
Fielding	Maymont	Stockwatering	1950	-	50	918.00
Fife Lake Restoration	Constance	Irrigation & Dam	1954	1,200	-	9,596.00
Fife Lake #2	Constance	Irrigation & Dam	1954	650	-	6,348.00
Fillmore Reclamation Project	Fillmore	Irrigation	Incomplete	1,600	-	656.00
Fleming	Moosomin	Stockwatering	1950	-	75	3,282.00
Foam Lake (Elfros)	Foam Lake	Flood Irrigation	1957	4,000	-	11,539.00
Francis Lake	Morse	Irrigation	Incomplete	1,560	-	17,305.00
Frenchman Flats	Dundurn	Irrigation	1949	1,800	2,800	9,996.00
Frenchville	Frenchville	Irrigation & Dam	1947	430	670	8,096.00



Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Gibson Flats	Pennant	Irrigation	1953	1,200	-	14,177.00
Girvin	Girvin	Stockwatering	1937	-	19	2,180.00
Glasnevin	Glasnevin	Dugout	1953	-	1.5	554.00
Glenside	Glenside	Stockwatering	1948	-	150	3,286.00
Gooseberry Lake	Corning	Stockwatering	1948	-	2,500	8,783.00
Gordon Grazing	Chauvin	Dugout	1953	-	1.5	830.00
Gouverneur Dam	Ponteix	Irrigation	1952	6,000	10,000	242,468.00
Gravelbourg South	Gravelbourg	Irrigation	1948	600	1,500	8,186.00
Gravelbourg Storage	Gravelbourg	Irrigation	1947	500	-	1,917.00
Grosnick	Lake Alma	Stockwatering Dugout	1957	-	1.5	1,000.00
Gunn Grazing Co-op	Shaunavon	Multi-purpose Res.	1957	-	10	1,632.00
Hague Dugout	Hague	Stockwatering	1950	-	2	1,000.00
Hodgeville	Hodgeville	Stockwatering	1949	-	5	2,748.00
Hanley	Hanley	Stockwatering	1946	-	60	3,797.00
Harris Reservoir	Maple Creek	Irrigation	1956	1,000	5,000	238,074.00
Hugonard Coulee Dam	Lebret	Multi-purpose Res.	1956	100	400	64,231.00
Jackfish Creek	Meota	Stockwatering	1943	-	90	2,940.00
Jubilee	Indian Head	Multi-purpose Res.	1956	-	1.5	979.00
Jumping Deer Creek	Lipton	Stockwatering	1947	-	145	6,092.00
Kaposvar	Stockholm	Stockwatering	1947	-	290	11,946.00
Kaposvar Creek	Melville	Stockwatering	1954	-	1,400	102,747.00
Katepwa Weir	Katepwa	Water Control	1957	-	-	61,192.00
Kelfield	Kelfield	Stockwatering	1947	-	25	4,927.00
Kerobert	Kerobert	Multi-purpose Res.	1957	-	40	11,554.00
Kincaid	Kincaid	Stockwatering	1956	-	10	2,539.00
Kindersley	Kindersley	Stockwatering	1949	-	300	2,007.00
King George	Dinsmore	Stockwatering Dugout	1957	-	1.5	999.00
Kisbey Flats	Kisbey	Irrigation	1939	2,300	5,000	23,211.00
Koch-Froh	Qu'Appelle	Multi-purpose Res.	1956	160	-	2,390.00

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Lac Pelletier	Lac Pelletier	Stockwatering	1937	-	3,350	2,139.00
Lacadena	Lacadena	Irrigation	1954	-	-	9,678.00
Laird, R. M. of	Waldheim	Dugout	1953	-	1.5	999.00
Lafleche	Lafleche	Stockwatering	1940	-	38	2,524.00
Lafleche Dam	Lafleche	Multi-purpose Res.	Incomplete	15,000	30,120	539,687.00
Lajord	Lajord	Flood Control	1936	-	300	13,800.00
Lake of the Rivers	Assiniboia	Stockwatering	1938	-	300	10,805.00
Lancer Water Users	Lancer	Irrigation	1953	1,265	-	35,000.00
Langenburg	Langenburg	Irrigation & Dam	1949	800	200	11,752.00
Langenburg	Langenburg	Irrigation	Incomplete	-	2.5	3,000.00
Larsen	Radville	Multi-purpose Res.	1957	-	500	36,437.00
Last Mountain Lake	Qu'Appelle Valley	Irr. & Water Control	1941	x	-	42,721.00
Lebret	Qu'Appelle Valley	Irr. & Water Control	1941	x	-	16,307.00
Lemsford	Lemsford	Stockwatering Dugout	1957	-	1.5	1,000.00
Leroy, R. M. of	Leroy	Stockwatering	1956	-	1.5	994.00
Linacre Grazing Co-op.	Fox Valley	Dugout	1955	-	1.5	644.00
Lodge Lake	Evesham	Dugout	1955	-	1.5	939.00
Little Manitou	Senlac	Dugout	1953	-	1.5	862.00
Little Manitou Lake	Watrous	Diversion Canal	1957	-	-	39,271.00
Lonesome Lake	Vidora	Irrigation	1949	900	800	2,771.00
Long Creek #1	Estevan	Stockwatering	1938	-	137	8,729.00
Long Creek #2	Estevan	Stockwatering	1938	-	90	8,701.00
Loon Creek	Markinch	Stockwatering	1945	-	700	7,180.00
Lucky Lake	Lucky Lake	Stockwatering	1946	-	120	7,596.00
MacIntosh Slough	Golden Prairie	Irrigation	1949	500	1,500	1,990.00
Macklin Storage	Macklin	Stockwatering	Incomplete	-	40	967.00
Manitou Cattle Breeders Co-op.	Chauvin	Dugout	1955	-	1.5	935.00
Mankota Dam	Mankota	Stockwatering	1950	-	10	950.00
Maple Creek	Maple Creek	Irrigation & Dam	1938	10,000	23,260	356,179.00
March Flood Irrigation	Cedoux	Irrigation	1948	400	-	1,765.00
Masefield	Masefield	Stockwatering	1938	-	40	3,187.00



Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Masefield Water Users	Masefield	Multi-purpose Res.	1957	500	250	7,999.00
Matador	Matador	Irrigation & Dam	1946	120	220	5,216.00
Maxim Lake	Maxim	Stockwatering	1949	-	5,000	20,472.00
McCreaney, R.M. of	Kenaston	Stockwatering	1937	-	350	1,896.00
McDonald Creek	McCord	Irrigation & Dam	1950	400	90	4,992.00
Meadowland	Macklin	Irrigation	1954	500	-	6,370.00
Meeting Lake	Redfield	Stockwatering	1949	-	100	2,683.00
Melaval	Melaval	Stockwatering	1950	-	18	1,200.00
Mennon	Waldheim	Stockwatering	1949	-	2	976.00
Meota, R.M. of	Meota	Dugout	1953	-	1.5	1,000.00
Middle Creek	Battle Creek	Irrigation	1937	1,000	20,000	18,663.00
Mine Coulee	Neptune	Stockwatering	1948	-	40	4,377.00
Monet	Hughton	Stockwatering	1949	-	10	878.00
Montague Lake	Assiniboia	Irrigation	Incomplete	235	-	1,000.00
Moose Jaw Creek	Lang	Irrigation	1938	2,250	2,180	7,618.00
Moose Mountain	Corning	Irrigation	1937	-	8,000	14,829.00
Moosomin Dam (Keenan Bridge)	Moosomin	Multi-purpose Res.	1954	-	9,000	449,184.00
Mossbank	Mossbank	Stockwatering	1949	-	2	875.00
Muenster	Muenster	Irrigation	1949	25	11	2,754.00
Newburn Lake	Invermay	Irrigation & Dam	1952	50	1,280	6,477.00
North Battleford, City of	N. Battleford	Dugout	1953	-	1.5	970.00
North End Grazing	Macklin	Dugout	1954	-	1.5	728.00
North Herbert Extension	Herbert	Irrigation	Incomplete	-	-	511,909.00
North Qu'Appelle	Fort Qu'Appelle	Stockwatering	1948	-	100	2,386.00
Oxbow	Oxbow	Irrigation & Dam	1941	3,900	3,200	17,436.00
Pangman	Pangman	Multi-purpose Res.	1957	30	125	5,533.00
Pasqua	Moose Jaw	Stockwatering	1948	-	40	3,777.00
Pike Lake	Vanscoy	Irrigation & Dam	1948	900	2,500	7,360.00
Pipestone Lake	Broadview	Stockwatering	1938	-	1,600	11,785.00

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Pleasant Creek	Lemberg	Storage	1954	-	500	114,464.00
Plenty, Village of	Plenty	Dugout	1955	-	1.5	893.00
Poplar River	Coronach	Irrigation & Dam	1950	300	900	14,838.00
Portreeve	Portreeve	Stockwatering Dugout	1957	-	1.5	1,000.00
Prairiedale	Superb	Stockwatering	1949	-	2	987.00
Primate	Primate	Stockwatering Dugout	1957	-	1.5	1,000.00
Prospect Grazing Co-op.	Linacre	Stockwatering	1956	-	1.5	820.00
Radville	Radville	Stockwatering	1947	-	32	5,019.00
Readlyn	Readlyn	Stockwatering	1950	-	3	800.00
Reciprocity	Glen Ewen	Irrigation & Dam	1949	2,000	1,750	27,410.00
Reford	Wilkie	Stockwatering	1951	-	160	1,814.00
Reward	Reward	Stockwatering	1951	-	-	921.00
Richman Irrigation	Glen Bain	Irrigation	1949	-	1,000	4,607.00
Richardson-McKinnon	Consul	Irrigation	1946	3,000	-	53,913.00
Ridgeway Flats	Qu'Appelle	Multi-purpose	1957	65	80	2,054.00
Rockglen Grazing	Rockglen	Irrigation & Dam	1955	600	300	13,455.00
Rosedale	Hanley	Irrigation	1948	60	100	1,016.00
Rosemount Co-op.	Landis	Dugout	1953	-	1.5	903.00
Rough Bark Creek	Goodwater	Stockwatering	1937	-	1,500	9,314.00
Round Hill Water Users	N. Battleford	Irrigation & Dam	1950	425	50	4,791.00
Russell Creek	Pambrun	Irrigation	1951	1,000	2,000	66,493.00
Saline	Invermay	Multi-purpose Res.	Incomplete	1,000	-	2,107.00
Salvador	Reward	Stockwatering	1951	-	5	1,000.00
Saskatoon	Saskatoon	Storage	1940	-	1,200	290,446.00
Sauder	Rush Lake	Storage & Irrigation	1949	-	800	29,115.00
Scotsguard	Scotsguard	Irrigation & Dam	1949	2,000	3,000	1,962.00
Scotsguard	Shaunavon	Stockwatering Dugout	Incomplete	-	3	930.00
Shaheen	Rush Lake	Storage & Irrigation	1949	-	300	9,028.00
Sherwood	Regina	Dugout	1948	20	3	697.00
Shrimp Lake	Herschel	Stockwatering	1947	-	450	9,367.00
Sinfield	Kelvington	Multi-purpose Res.	1957	10	-	3,177.00



Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Sioux Reserve	Fort Qu'Appelle	Stockwatering	1949	-	75	8,605.00
Smiley, Village of	Smiley	Dugout	1949	-	1.5	1,000.00
Smiley	Smiley	Irrigation & Dam	1951	600	300	9,998.00
Snake Bite	Beechy	Irrigation	1954	665	-	9,999.00
Snipe Lake	Eston	Stockwatering	1949	-	-	3,415.00
Snowdown	Fox Valley	Dugout	1954	-	1.5	898.00
Souris-Estevan	Estevan	Irrigation & Dam	1941	-	-	91,133.00
Souris River	Weyburn	Flood Control	1948	-	-	11,998.00
South Abernethy Project	Abernethy	Irrigation	Incomplete	320	-	14,568.00
Southey, Village of	Southey	Multi-purpose	1956	-	2	997.00
Spangler Project	Govenlock	Irrigation	1948	1,500	2,100	4,950.00
Stelcam Community Dam	Stelcam	Stockwatering	Incomplete	-	360	9,791.00
Stephens Dam	Abernethy	Stockwatering	1948	-	12	8,716.00
Stewart Valley Dugout	Stewart Valley	Stockwatering	1950	-	3	799.00
Sturgis Community Dam	Sturgis	Stockwatering	1950	-	60	20,961.00
Summerberry	Summerberry	Multi-purpose Res.	Incomplete	427	-	6,824.00
Summercove	Mankota	Irrigation & Dam	1949	1,200	1,500	23,837.00
Summit Creek	Bridgeford	Irrigation & Dam	1949	800	3,000	13,227.00
Sunbeam Creek	Indian Head	Multi-purpose Res.	Incomplete	100	300	5,216.00
Sunny South	Indian Head	Multi-purpose Res.	1956	-	1.5	990.00
Swan Hill Grazing Co-op.	Donavon	Dugout	1955	-	1.5	709.00
Swanson Co-op Pasture	Donavon	Stockwatering	1956	-	1.5	770.00
Swift Current	Swift Current	Irrigation & Dam	1946	30,000	95,000	816,472.00
Talmage	Cedoux	Irrigation	1948	1,600	-	3,483.00
Tantallon	Tantallon	Stockwatering	1942	-	-	2,790.00
Tatagwa Lake	Weyburn	Flood Irrigation	Incomplete	10,000	-	17,428.00
Terrell, R.M.	Spring Valley	Stockwatering	1952	-	10	2,491.00
Thunder Creek	Kettlehut	Flood Irrigation	1948	-	-	27,204.00
Thunder Creek Channel	Moose Jaw	Irrigation & Dam	1951	300	7,000	10,007.00
Tribune Dam	Tribune	Stockwatering	1950	-	300	6,499.00
Truax	Truax	Stockwatering	1949	-	250	11,899.00
Tuxford	Tuxford	Flood Irrigation	1957	800	-	7,320.00

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Twelve Mile Lake Tyvan	Maxstone Tyvan	Flood Irrigation Stockwatering	1956 1947	- -	- 1,000	7,998.00 11,986.00
Val Marie	Val Marie	Irrigation	1937	5,920	7,000	214,558.00
Val Marie West	Val Marie	Irrigation	1940	4,230	2,000	150,639.00
Valeport Dyke	Valeport	Flood Control	Incomplete	1,500	-	95,562.00
Valley Centre	Bents	Stockwatering Dugout	1957	-	1.5	896.00
Valley Park Irrigation	Valley Lake	Irrigation	1949	1,200	-	8,133.00
Vera Grazing	Vera	Dugout	1953	-	1.5	891.00
Vera Winter Grazing	Vera	Dugout	1954	-	1.5	939.00
Viceroy	Viceroy	Stockwatering	1950	-	3	798.00
West Osage	Cedoux	Irrigation & Dam	1949	300	600	4,905.00
West Poplar #1	Kildeer	Multi-purpose Res.	1957	750	1,000	16,230.00
Weyburn	Weyburn	Flood Irrigation	1940	-	4,000	51,311.00
Wheatlands, R.M. of	Parkbeg	Irrigation & Dam	1951	100	60	3,452.00
Wilson Lake	Lizard Lake	Multi-purpose Res.	Incomplete	400	-	2,813.00
Wittrock	Hodgeville	Irrigation	1947	520	-	3,884.00
Wolseley	Wolseley	Stockwatering	1948	-	20	1,800.00
Wolverine Creek	Humboldt	Stockwatering	1945	-	522	52,600.00
Wood Mountain	Willow Bunch	Irrigation & Dam	1951	40	60	6,337.00
Woodrow - Pinto Creek	Woodrow	Irrigation	1949	1,000	1,400	41,982.00
Wood River Development	Coderre and Gravelbourg	Stockwatering	1942	-	4,923	33,738.00
Wynn Community Project	Wolseley	Multi-purpose Reclamation	1957	500	-	3,152.00
Wynyard	Wynyard	Stockwatering	1947	-	35	6,225.00
Yonker Grazing Co-op. Young	Chauvin Young	Dugout Stockwatering	1955 1948	- -	1.5 250	807.00 8,892.00

(x) Ultimate irrigation development for all projects along  
Qu'Appelle River Valley 30,000 - (total storage cap-  
acity - 95,600 acre feet).



ALBERTA

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Acadia Valley	Acadia Valley	Dugout	1953	-	1.5	2,252.00
Acadia Valley #2	Acadia Valley	Dugout	1954	-	1.5	1,000.00
Aetna Irrigation District	Aetna	Irrigation	1947	8,000	-	82,004.00
Ambrose Flats	Irvine	Irrigation	1951	800	1,000	4,781.00
Anatole	Hanna	Stockwatering	1953	-	7	2,990.00
Antelope Park	Nemiscam	Stockwatering Dugout	1957	-	1.5	1,000.00
Argyle, M.D. of	Staveley	Stockwatering	1949	-	80	10,912.00
Atlee Gas Well #1	Atlee	Irrigation (pump)	1939	7,000	-	12,423.00
Atlee Gas Well #2	Atlee	Irrigation (pump)	1939	-	-	14,300.00
Badger Lake	Lomond	Stockwatering	1948	-	10	2,990.00
Balzac	Balzac	Irrigation	1956	900	-	8,141.00
Bare Creek	Comrey	Irrigation & Dam	1950	-	500	11,600.00
Bare Creek #2	Comrey	Multi-purpose Dam	1956	1,000	1,100	13,029.00
Bartman Dam	Cessford	Irrigation & Dam	1943	1,000	3,000	49,100.00
Beauvais Lake	Pincher Creek	Irrigation	1950	2,000	2,400	15,996.00
Beaver Creek Stock Assoc.	Fort MacLeod	Dugout	1955	-	-	981.00
Beaver Dam Creek Reservoir	Castor	Stockwatering	1950	-	300	17,996.00
Bedford Slough	Medicine Hat	Irrigation	Incomplete	3,000	200	35,493.00
Bell Lake	Pollockville	Irrigation	1949	700	1,500	4,738.00
Berry Creek	Carolside	Irrigation	1948	10,000	30,000	158,884.00
Bluefield Grazing Assoc.	Thelma	Stockwatering	1956	-	30	3,500.00
Bowell	Bowell	Dugout	1954	-	1.5	1,000.00
Bowell West Grazing Assoc.	Bowell	Dugout	1955	-	1.5	744.00
Bow Island 40 Mile Grazing	Bow Island	Dugout	1954	-	1.5	782.00
Bowmanton	Bowmanton	Stockwatering	1953	-	500	14,860.00
Brunswick Coulee	Enchant	Irrigation	1949	500	205	4,631.00
B.T. Grazing Co-op.	Hilda	Stockwatering	1956	-	1.5	1,000.00
Bull Pound Creek	Hanna	Stockwatering	1939	-	2,000	-
Bullshead Creek	Medicine Hat	Irrigation & Dam	1940	800	1,130	8,170.00

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Burke Creek	Claresholm	Stockwatering Dugout	1957	-	6	3,890.00
Burmis Creek	Burmis	Multi-purpose Res.	1957	550	250	14,683.00
Cameron	Youngtown	Multi-purpose Dam	Incomplete	662	1,000	3,905.00
# Canada Land & Irrig. Project	Medicine Hat	Irrigation	1936	45,000	-	80,000.00
Caranova	Bowell	Multi-purpose Res.	1957	500	250	8,199.00
Carbon	Carbon	Multi-purpose Res.	1957	300	50	8,958.00
Champion	Champion	Irrigation	1954	2,500	-	4,984.00
Chipman Creek	Burmis	Flood Irrigation	1957	700	-	3,298.00
Clear Lake	High River	Stockwatering	1948	-	10,000	35,000.00
Collins	Sheerness	Stockwatering Res.	1956	-	40	3,495.00
Commodore	Vulcan	Irrigation	1954	400	-	3,990.00
Comrey Grazing	Comrey	Dugout	1953	-	1.5	1,000.00
Comrey #2	Comrey	Dugout	1954	-	1.5	980.00
Conrich	West Calgary	Irrigation	1954	1,600	-	6,240.00
Consort	Hanna	Stockwatering	1955	-	20	9,651.00
Cowley Community	Cowley	Irrigation	1952	750	-	4,666.00
Cressday	Medicine Hat	Stockwatering	1954	-	-	13,541.00
Cutbank Coulee	Cressday	Stockwatering Res.	Incomplete	350	500	2,337.00
C.Y. Water Users	Taber	Stockwatering	1949	-	310	16,477.00
D'Arcy	Hanna	Multi-purpose Res.	1957	-	15	2,116.00
Dead Fish Creek	Cessford	Irrigation	1949	4,000	5,000	47,832.00
Del Bonita	Twin River	Stockwatering	1955	-	250	9,196.00
Delia	Mortin	Stockwatering	Incomplete	-	165	3,914.00
Drowning Ford	Vale	2 Dugouts & Dam	1953	-	100	4,368.00
East Berry Creek	Roselynn	Irrigation	1949	1,500	750	9,677.00
Eastern Irrigation District	Brooks	Irrigation	1937	2,280	22,000	22,490.00
Esler	Hanna	Stockwatering	1954	-	17	2,808.00
Esther Flood Irrigation	Macklin	Irrigation	1952	4,000	5,000	4,592.00
Eureka Irrigation Project	Grassy Lake	Irrigation	1949	12,000	1,000	38,568.00



Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Fertility Grazing Assoc. Fish Lake	Hanna	Stockwatering	1956	-	1.5	998.00
Franklin Coulee	Pincher Creek Retlaw	Irrigation & Dam Stockwatering	1954 1948	1,000 -	- 1,500	6,895.00 20,125.00
Garden Plains	Hanna	Stockwatering	1956	-	1.5	999.00
Graham Creek	Calgary	Stockwatering	1943	-	230	8,529.00
Grainger	Three Hills	Multi-purpose Res.	1956	30	117	9,482.00
Greasewood Coulee	Manyberries	Irrigation & Dam	1954	500	650	9,798.00
Green Butte	Hanna	Stockwatering Dugout	1957	-	1.5	995.00
Hampton	Youngstown	Multi-purpose Res.	1957	2,000	401	8,000.00
Hanna	Hanna	Stockwatering	1948	-	500	29,498.00
Hilda Community Project	Hilda	Multi-purpose Dugout	Incomplete	-	10	5,180.00
Illingsworth	Bow Island	Dugout	1954	-	1.5	1,000.00
Indian Farm Creek	Pincher Creek	Irrigation & Dam	1953	600	500	4,795.00
Indus Community Project	Conrich	Irrigation	1955	1,220	-	9,843.00
Irvine	Irvine	Irrigation & Dam	1950	70	100	4,799.00
Jaydot	Elkwater	Multi-purpose Res.	1956	300	400	8,988.00
Kathryn	Calgary	Irrigation & Dam	1954	300	-	9,184.00
Lake Valley	Bowell	Stockwatering Dugout	1957	-	1.5	1,000.00
# Leavitt Irrigation	Mountain View	Irrigation	1939	7,000	7,050	65,578.00
Lewis	Vulcan	Irrigation & Dam	1953	350	-	4,345.00
Loveland	Hanna	Irrigation	1954	3,000	-	17,655.00
Loyalist Creek	Hanna	Irrigation	1950	2,000	1,400	14,993.00
Lundbreck	Pincher Creek	Stockwatering	1953	-	100	4,689.00
McAlpine Reservoir	Walsh	Irrigation	1951	600	1,000	15,917.00
McGregor Dam	Vulcan	Irrigation	1951	1,500	700	9,473.00

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
McLaren	Michichi	Multi-purpose Res.	1957	150	660	13,815.00
Mackay Dam	Walsh	Irrigation	1952	600	300	9,600.00
# Magrath	Magrath	Irrigation	1939	4,000	-	2,756.00
Meadow Creek Dam	Claresholm	Irrigation	1952	1,500	-	5,630.00
Milne Community Project	Conrich	Irrigation	1955	1,300	-	9,644.00
Morley	Morley	Stockwatering	1956	=	1.5	980.00
Mountain View	Mountain View	Storage	1936	=	4,200	3,000.00
Naismith	Youngstown	Multi-purpose Res.	1956	300	145	9,421.00
Nemiscam	Etzikom	Dugout	1954	=	1.5	1,000.00
Nester	Cessford	Multi-purpose Res.	1957	300	1,350	8,670.00
Nobleford Water Users	Nobleford	2 Dugouts	1953	-	3	11,173.00
North Fincastle	Taber	Irrigation & Dam	1948	2,000	4,000	17,943.00
Oyen	Oyen	Stockwatering Dugout	1957	-	1.5	1,000.00
Pancost - Olson Water Users	Bowell	Dugout	1955	-	1.5	999.00
Parfles	Chancellor	Irrigation	1954	250	-	4,730.00
Peace Butte Reservoir	Peace Butte	Stockwatering	1955	450	550	8,993.00
Pershing Dam	Glenwood	Irrigation	1951	100	200	4,782.00
Petiskii Grazing Assoc.	Nanton	Stockwatering	1955	-	1.5	990.00
Pirmez Creek	Pirmez Creek	Irrigation	1951	6,000	500	20,998.00
Pollockville	Pollockville	Stockwatering Dugout	1957	-	1.5	998.00
Pothole Coulee	Magrath	Irrigation	1948	Part of St. Mary Project		
Priddis	High River	Stockwatering	1955	-	312	8,802.00
Provost, Village of	Provost	Multi-purpose Dam	1956	-	3	4,812.00
Ranchville Community Res.	Ranchville	Irrigation	1957	300	-	4,950.00
# Raymond	Raymond	Irrigation	1943	3,000	1,600	6,000.00
Reid Hill	Vulcan	Irrigation	1952	1,000	700	8,866.00
Rock Lake Project	Brooks	Irrigation Res.	1957	11,000	-	133,984.00
# Rolling Hills	Rolling Hills	Irrigation	1938	25,000	-	46,839.00



Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Rose Glen Water Users	Schuler	Multi-purpose Dam	1957	200	150	6,780.00
Ross Creek	Irvine	Irrigation	1950	3,000	5,000	47,998.00
Ross Lake Community	Raymond	Stockwatering	1950	-	300	7,987.00
Rough Meadow Reservoir	Coronation	Irrigation	Incomplete	200	-	2,471.00
Ruks	Pincher Creek	Irrigation & Dam	1954	900	250	6,484.00
Schuler Water Users	Schuler	Multi-purpose Res.	Incomplete		50	5,443.00
Serviceberry Creek	near Drumheller	Irrigation	1949	1,200	500	17,518.00
Seven Persons	Seven Persons	Stockwatering	1943	-	800	12,103.00
Severn Creek	Rosebud	Irrigation & Dam	1950	1,000	1,000	24,990.00
Sheerness Grazing (Blois)	Roselynn	Stockwatering	1953	-	12	3,797.00
Sheerness #2	Roselynn	Stockwatering	1954	-	50	2,190.00
Snake Creek	Calgary	Irrigation & Dam	1950	500	300	15,976.00
Spondin	Hanna	Dugout	1955	-	1.5	1,000.00
Starland, M.D. of	Morrin	Stockwatering	Incomplete	-	45	3,196.00
Stehr Coulee	Walsh	Multi-purpose Res.	1956	-	26	4,570.00
Sounding Creek	Cereal	Irrigation	1949	8,000	5,600	51,988.00
South Macleod	Macleod	Irrigation	1948	6,000	-	82,614.00
Squaw Coulee	High River	Irrigation	1949	2,000	455	17,999.00
Swalwell	Swalwell	Multi-purpose Res.	1957	280	300	9,463.00
Three Hills	Three Hills	Stockwatering	1948	-	120	19,652.00
Twin Lakes	Chancellor	Irrigation	1954	500	-	12,498.00
Twin River Grazing	Twin River	Stockwatering	1953	-	125	4,486.00
Two Lakes	Elkwater	Multi-purpose Res.	Incomplete	1,500	1,900	12,562.00
Vulcan Dam	Vulcan	Irrigation	1951	400	150	3,997.00
Vauxhall	Vauxhall	Stockwatering	1948	-	30	5,883.00
Waddington	Vale	Multi-purpose Res.	1957	-	12	2,904.00
Walsh Flats	Walsh	Irrigation	1953	2,100	25,000	4,700.00
Watts Flats						
(Bull Pound-Lone Butte)	Watts	Flood Irrigation	Incomplete	2,000	-	6,147.00

Name of Project	Location	Type of Project	Completed	Irr. Ac.	Stor. Cap. Acre Feet	Costs
Wheatacre #2	Rockyford	Irrigation	1952	-	-	4,744.00
Wheatacre Dam	Rockyford	Irrigation	1950	1,600	1,500	12,976.00
Wild Horse Storage	Cressday	Irrigation	1936	3,600	4,500	24,370.00
Wintering Hills	Hussar	Irrigation	1950	1,000	500	9,993.00
Wisdom Water Users	Medicine Hat	Multi-purpose Res.	1957	420	500	14,403.00
Woolford Community Project	Cardston	Irrigation	1955	400	-	3,593.00
Yeast Reservoir	Thelma	Irrigation	1953	400	800	6,592.00

# - P.F.R.A. gave assistance to a project already in existence to improve storage capacities, canals and distribution systems.



# APPENDIX IV CUMULATIVE STATEMENT

Development and Operation of Community Pastures under the  
Prairie Farm Rehabilitation Act  
1938 to March 31, 1958

Fiscal Year	No. of Pasture Units in Opera- tion	Area of Land in Pastures (Acres)	Total Cost of Construction of Pastures \$	Livestock Units Carried on Pastures	Acres Per Unit of Live- stock	X		Operating Costs \$	Net Opera- ting Cost per Unit of Livestock \$	Average Charge per Unit Live- stock to Farmers \$
						Revenue \$	Cost of Operation			
1938-39	14	189,800	165,995.03	3,231	58.7	6,339.92		10,185.52	3.15	1.96
1939-40	26	612,300	663,471.25	11,522	53.1	21,632.71		20,945.84	1.82	1.88
1940-41	35	884,500	1,004,305.91	23,245	38.1	43,451.56		35,291.05	1.52	1.87
1941-42	38	936,548	1,187,360.92	33,230	28.2	65,434.89		50,607.22	1.52	1.97
1942-43	45	1,261,100	1,129,487.54	51,127	24.7	98,292.32		79,906.76	1.56	1.92
1943-44	46	1,268,140	1,558,055.31	54,472	23.3	111,114.25		107,534.66	1.97	2.04
1944-45	49	1,337,320	1,699,012.21	59,997	22.3	151,461.08		117,064.90	1.95	2.52
1945-46	50	1,361,440	1,857,020.37	67,778	20.1	167,045.16		136,567.09	2.01	2.46
1946-47	53	1,412,860	2,072,274.21	68,493	20.6	198,115.27		145,292.51	2.12	2.89
1947-48	53	1,417,320	2,208,919.12	66,347	21.4	203,888.11		161,471.05	2.43	3.07
1948-49	54	1,436,480	2,486,277.28	71,393	20.1	204,012.40		175,666.27	2.46	2.86
1949-50	54	1,439,680	2,809,196.14	70,308	20.5	211,624.23		172,255.25	2.45	3.01
1950-51	56	1,521,080	3,237,330.55	68,858	22.1	221,129.45		217,867.15	3.16	3.21
1951-52	57	1,574,642	3,426,586.10	77,240	20.4	335,327.16		237,742.13	3.08	4.34
1952-53	59	1,652,020	3,754,098.41	94,137	17.5	438,513.75		373,737.36	3.97	4.66
1953-54	60	1,678,736	3,963,572.83	109,583	15.3	507,179.14		490,807.89	4.48	4.55
1954-55	60	1,696,900	4,273,916.79	106,322	15.9	496,805.78		466,153.69	4.38	4.66
1955-56	60	1,728,700	4,509,668.59	108,499	15.8	499,045.13		501,540.73	4.67	4.60
1956-57	61	1,759,570	4,832,863.47	117,441	14.9	548,601.01		508,002.83	4.33	4.67
1957-58	61	1,796,275	5,119,317.01	119,398	15.0	552,938.40		607,129.23	5.08	4.63
						5,081,951.72		5,115,769.13		

x - A livestock unit indicates one head of cattle, one horse, or five sheep.

A pasture unit may include one or more pastures, but it is operated under one management.

# APPENDIX V

P.F.R.A. Community Pastures in Operation During the Fiscal Year ended March 31, 1957-58

Community Pastures and Headquarters	Total Area of Pasture Fenced (Acres)	Accumulated Cost of Construction March 31, 1957	Accumulated Cost of Construction March 31, 1958	1957-58	
				Cattle	Stock Pastured Horses
SASKATCHEWAN					
Pasture Units					
Coalfields # 4, North Portal	32,380	144,501.23	148,740.78	2,552	47
Estevan-Cambria # 5-6, Macoun	6,720	17,216.68	18,168.68	329	3
Masefield # 17, Orkney	34,880	90,833.27	100,391.42	1,916	8
Lone Tree # 18, Bracken	33,600	86,954.76	93,571.92	2,178	34
Battle Creek # 20, Divide	66,880	112,267.53	115,233.66	2,494	21
Nashlyn # 21, Consul	61,520	77,963.51	86,554.86	2,362	-
Govenlock # 22, Govenlock	68,800	105,247.04	106,567.04	2,415	4
Lomond # 37, Pasture # 1, Goodwater	23,360	69,010.93	80,189.72	2,158	36
Lomond # 37, Pasture # 3, Maxim	18,400	68,978.93	71,340.38	1,594	21
Laurier # 38, Lomond # 37 - # 2, Radville	37,175	81,958.63	89,838.71	2,823	38
The Gap # 39, Hardy	13,920	49,525.28	84,274.31	1,243	28
Val Marie # 47, Val Marie	156,320	249,955.36	257,958.21	7,374	12
Beaver Valley # 47A, Val Marie	11,360	25,445.11	25,445.11	679	-
Reno # 51, Pasture # 1, Robsart	17,120	57,233.59	61,202.89	1,284	11
Reno # 51, Pasture # 2, Consul	11,360	28,197.48	28,814.38	717	-
Tecumseh # 65, Forget	18,400	64,490.77	67,377.91	2,059	35
Brokenshell # 68, Pasture # 1, Yellow Grass	22,720	57,652.77	69,324.89	1,596	53
Brokenshell # 68, Pasture # 2, Weyburn	8,160	14,818.47	14,818.47	420	-
Excel-Key West # 71-70, Ormiston	30,740	76,038.07	90,871.62	3,049	-
Auvergne-Wise Creek # 76-77, Ponteix	42,880	137,158.25	140,173.86	3,161	5
Wellington # 97, Tyvan	25,360	98,669.45	103,541.09	3,770	56
Caledonia-Elmsthorpe # 99-100, Milestone	26,400	106,048.21	116,307.87	2,425	71
Shamrock # 134, Shamrock	26,080	77,574.39	82,798.39	1,860	24
Swift Current-Webb # 137-8, Beverly	18,720	77,929.61	81,878.71	1,648	22



Community Pastures and Headquarters	Total Area of Pasture Fenced (Acres)	Accumulated Cost of Construction March 31, 1957	Accumulated Cost of Construction March 31, 1958	1957-58	
				Cattle	Stock Pastured Horses
SASKATCHEWAN - ( Contd.)					
Pasture Units					
Gull Lake #139, Tompkins	10,720	30,650.46	32,362.21	554	-
Big Strick #141, Maple Creek	18,160	43,339.75	44,197.75	1,458	-
Bitter Lake #142, Maple Creek	47,410	111,104.36	118,504.20	2,713	-
Spy Hill #152, Welby (Operated in conjunction with Ellice, Manitoba)	19,570	51,315.25	51,696.15	2,344	27
Elbow #223-4, Elbow	30,080	77,615.14	80,242.45	3,457	28
Beaver Hills #245-6, Homefield P.O.	44,160	111,291.30	115,111.64	2,793	132
Willner #253, Rosemae P.O.	13,280	51,450.24	80,646.25	1,869	44
Coteau #255, Birsay	27,520	62,818.09	62,818.09	1,478	15
Monet #257, Elrose	46,840	111,055.85	111,055.85	2,931	23
Fairview #258, Rosetown	17,000	82,799.27	114,620.21	826	6
Newcombe #260, Glidden	52,960	162,059.35	164,069.32	3,040	20
Mantario #262, Empress, Alta.	24,960	69,706.80	69,706.80	1,738	-
Mount Hope-Prairie Rose #279-309 (Under Construction)	31,540	61,202.77	61,202.77	-	-
Wreford #280, Hatfield	13,440	78,916.96	79,731.84	1,231	-
McCraney #282, Davidson	10,720	68,725.24	69,677.74	1,624	-
Rudy-Rosedale #284-3, Broderick	19,200	87,109.35	88,333.45	1,993	45
Hillsburgh #289, Brock	13,600	53,826.64	55,439.48	918	-
Eagle Lake #289-319, Netherhill	22,500	81,258.44	83,830.94	1,155	3
Kindersley-Elma #290-1, Smiley	21,400	112,274.62	112,394.62	1,933	30
Usborne #310, Venn	12,680	37,070.38	41,680.54	1,738	-
Dundurn #314, Dundurn	44,840	110,899.54	111,080.89	1,905	-
Montrose #315, Donavon	20,480	63,329.25	64,591.49	1,227	-
Oakdale #320, Beaufield	20,800	60,411.74	60,512.93	1,169	13
Antelope Park #322, Hoosier	34,320	102,107.61	102,107.61	2,763	58
Wolverine #340, Plunkett	17,280	67,756.85	68,920.05	1,865	37
Mariposa #350, Kerrobert	26,880	88,027.34	88,617.34	1,768	15
Progress #351, Kerrobert	19,680	64,234.48	65,149.48	1,405	-

Community Pastures and Headquarters		Total Area of Pasture Fenced (Acres)	Accumulated Cost of Construction March 31, 1957	Accumulated Cost of Construction March 31, 1958	1957-58 Stock Pastured Cattle Horses	
SASKATCHEWAN - (Contd.)						
Pasture Units						
Heart's Hill #352, Compeer, Alta.		15,100	36,272.47	57,845.02	1,312	1
Park #375, Langham		7,040	22,535.62	22,633.89	386	-
Battle River-Cutknife #438-9, Gallivan		30,480	81,983.45	86,009.64	1,284	28
Royal #465, Lorenzo		65,120	187,302.82	197,087.61	1,754	37
Paynton #470, Paynton		23,840	70,917.07	76,293.58	1,419	25
Totals for Saskatchewan		1,636,855	4,415,835.05	4,773,556.71	106,208	1,116
Special Project - Bitter Lake Irrigation included in Bitter Lake Pasture						
MANITOBA						
Pasture Units						
Ellice Pasture, Welby, Sask. (operated in conjunction with Spy Hill #152)		20,320	28,746.37	28,746.37		
Archie Pasture, Welwyn, Sask.		39,740	89,249.36	92,063.11	1,800	16
Portage Pasture, Poplar Point		14,640	44,793.85	44,793.85	2,016	83
Woodlands Pasture, Poplar Point		20,960	68,220.56	68,647.13	2,406	26
Lakeview Pasture, Langruth		29,280	80,530.71	80,724.71	2,381	7
Westbourne Pasture, Gladstone		11,520	40,151.47	40,338.67	1,322	5
Langford Pasture, Neepawa		19,680	65,336.10	70,446.46	1,985	27
Wallace Pasture, Elkhorn		3,280	(Operated by R.M. Wallace)			
Totals for Manitoba		159,420	417,028.42	425,760.30	11,910	164
GRAND TOTALS		1,796,275	4,832,863.47	5,119,317.01	118,118	1,280



# APPENDIX VI

## MAJOR PROJECTS - IRRIGATION and RECLAMATION

(Projects by Special Votes of Parliament, Administered by P.F.R.A. to March 31, 1958.)

<u>Name of Project</u>	<u>Location</u>	<u>Type of Project</u>	<u>Completed</u>	<u>Irr. A.c.</u>	<u>Stor. -Acre Feet</u>	<u>Costs</u>
MANITOBA						
Assiniboine River Diking & Cut Off	Brandon	River Control	Incomplete	-	-	\$ 914,448.00
North-West Escarpment Reclamation	Dauphin	Watershed Control	Incomplete	-	-	911,892.00
Project - Riding Mountain Area						
Saskatchewan River Reclamation -	The Pas	Reclamation	Incomplete	135,000	-	1,950,282.00
Pasquia Area						
ALBERTA						
Bow River	Medicine Hat	Irrigation	Incomplete	235,000	408,862	54,398.00
(a) Purchase of Canada Land						- 87 -
& Irrigation Company						2,353,182.00
(b) Development & Construction						19,532,912.00
St. Mary	Lethbridge	Irrigation	Incomplete	510,000	320,000	13,061,022.00
Belly River Diversion	Lethbridge	Irrigation	1950	-	-	53,901.00
BRITISH COLUMBIA						
Cawston Benches	Keremeos	Irrigation (pump)	1951	629	2,000	185,491.00
Chase & Johnston - Western						
Canada Ranching	Kamloops	Irrigation	1951	755	-	98,243.00
Western Canada Ranching #2	Kamloops	Irrigation (pump)	1950	54	-	58,069.00
Lillooet - Pemberton	Pemberton	River Control	1953	-	-	1,056,539.00
South Thompson - Niskonlith						
Gravity Project	Kamloops	Irrigation	Incomplete	1,030	1,200	12,282.00
Westbank Project	Kelowna	Irrigation	1950	1,200	2,500	537,450.00
Bankhead Irrigation Project	Kelowna	Irrigation	1951	92	-	32,229.00
Penticton West Bench	Penticton	Irrigation (pump)	1953	800	-	66,362.00

(Above includes ONLY Construction Costs)

# APPENDIX VII

## PRAIRIE FARM REHABILITATION ACT - EXPENDITURE BY ACTIVITIES

April 1, 1935 - March 31, 1958

	1935-1957	1957-1958	Total
<b>ADMINISTRATION</b>			
Ottawa Administration	(a) 305,714	32,748	338,462
Regina Administration	(b) 1,335,092	152,661	1,487,753
Total	<u>1,640,806</u>	<u>185,409</u>	<u>1,826,215</u>
<b>EQUIPMENT</b>			
Purchase of Equipment	(k) 1,290,756	199,768	1,490,524
Upkeep of Equipment	(k) 880,114	119,665	999,779
Equipment Depot	1,904,508	305,152	2,209,660
Total	<u>4,075,378</u>	<u>624,585</u>	<u>4,699,963</u>
<b>LAND UTILIZATION</b>			
Supervision	637,127	47,602	684,729
Construction of Community Pastures	6,705,210	674,685	7,379,895
Pasture Improvements	356,143	107,652	463,795
Operation of Community Pastures	4,372,816	664,313	5,037,129
Purchase of Bulls	595,105	54,415	649,520
Re-establishment of Farmers	--	--	--
Grass Seeding & Experimental Regrassing	680,526	30,125	710,651
Total	<u>13,346,927</u>	<u>1,578,792</u>	<u>14,925,719</u>
<b>WATER DEVELOPMENT</b>			
Supervision	785,606	19,158	804,764
Small Projects including Engineering	15,655,118	1,029,343	16,684,461
Large Irrigation and Storage Projects			
Supervision	1,786,286	70,488	1,856,774
Construction and Improvements	8,066,436	574,855	8,641,291
Maintenance and Operation	5,848,296	361,280	6,209,576
Re-establishment of Farmers	200,904	15,325	216,229
Surveys and Explorations	1,660,484		1,660,484
Purchase of Land	737,550	14,441	751,991
Total	<u>34,740,681</u>	<u>2,084,890</u>	<u>36,825,571</u>
<b>Cultural work for soil drifting control and related problems prior to April 1, 1946 (under administration of Experimental Farms Service).</b>			
	4,966,394		4,966,394
<b>GRAND TOTAL</b>	<u>58,770,186</u>	<u>4,473,676</u>	<u>63,243,862</u>



# SPECIAL VOTES UNDER P.F.R.A. ADMINISTRATION

	<u>1935 - 1957</u>	<u>1957 - 1958</u>	<u>Total</u>
Assiniboine and Qu'Appelle Rivers, Surveys and Construction	779,193	249,582	1,028,775
Lillooet Project B.C. Construction & Exploration	1,170,133	--	1,170,133
Land Reclamation & Development in B.C.	1,940,049	--	1,940,049
St. Mary Irrigation Project - Alberta	17,717,575	1,617,640	19,335,215
Bow River Project - Alberta	23,974,416	1,674,158	25,648,574
Red Deer River Project - Alberta	899,976	71,792	971,768
Other Miscellaneous Projects - Construction	210,392	22,855	233,247
Land Protection & Reclamation - Manitoba	2,525,492	337,190	2,862,682
South Saskatchewan River Project - Saskatchewan	4,097,850	295,589	4,393,439
Buffalo Pound Project - Saskatchewan	1,215,785	440,515	1,656,300
Surveys and Engineering Costs	8,751,546	1,771,771	10,523,317
 GRAND TOTAL	 63,282,407	 6,481,092	 69,763,499

- (a) Included in Cultural Administration to March 31, 1938.
- (b) Included in Water Development Administration to March 31, 1938.
- (c) Includes \$388,923.57 expended under the Supplementary Public Works Construction Act, 1935.
- (d) Includes \$95,198.65 expended on St. Mary River Project (administration) in 1946-47.
- (e) Includes \$300,879.29 expended on St. Mary River Project (construction) in 1946-47.
- (f) Includes \$147,530.22 expended on St. Mary Project (administration) in 1947-48.
- (g) The amounts shown include Red Deer \$325,642 and South Saskatchewan \$370,093 provided by Department of Reconstruction. In addition, the following amounts were paid from P.F.R.A. Vote: South Saskatchewan - \$59,568; Red Deer - \$33,207.
- (h) General Survey charges now being paid from other P.F.R.A. Votes.
- (i) Amounts shown in Notes (d), (e) and (f) to be added to this total.
- (j) Veterans' Land Act expenditure not included.
- (k) Expenditures until 1949-50 included under Land Utilization and Water Development.
- (l) Previously under P.F.R.A. Vote (see item (g)).
- (m) Re-establishment of Farmers now under Water Development.
- (n) Previously under Land Utilization (see item (m)).

EXPENDITURES BY PROVINCES  
PRAIRIE FARM REHABILITATION ACT and SPECIAL VOTES UNDER ITS ADMINISTRATION  
April 1, 1935 - March 31, 1958

	MANITOBA	SASKATCHEWAN	ALBERTA	BRITISH COLUMBIA
P.F.R.A.	4,815,535	46,839,547	7,557,228	
Major Irrigation and Reclamation in the Prairie Provinces	47,805	6,145,441	45,792,196	
Land Reclamation, Construction and Development in B.C.				3,109,726
Land Protection and Reclamation	2,862,682			
Assiniboine and Qu'Appelle Rivers	981,053	47,722	3,649,556	146,585
Surveys and Engineering Costs	1,579,366	5,401,369	1,810,039	132,325
Administration	301,205	1,987,936		
	10,587,691	60,222,015	58,809,019	133,007,361

REVENUE  
REVENUE RECEIVED FROM PROJECTS UNDER P.F.R.A. OFFICE  
to March 31, 1958

Pasture Operation and General Revenue	5,345,139
Irrigation Project Operation (Under P.F.R.A. Vote)	606,916
Irrigation and General Revenue (Major Projects Vote)	1,770,576
TOTAL	7,722,631



APPENDIX VIII  
TOTAL IRRIGATION DEVELOPMENT - ALBERTA and SASKATCHEWAN

Project	Year Started	Irrigable Acreage		Major Reservoirs	(Live Storage (Acre Feet))	
		Present	Ultimate Proposals		Present	Ultimate
Mountain & Foothill Region						
United Irrigation Dist.	1921	21,000	34,000			
Mountain View Irrigation Dist.	1925	3,600	3,600	Driggs Lake	7,500	7,500
Leavitt-Aetna Irr. Dist.	1943	3,600	11,700			
MacLeod Irr. Dist.	1948	2,500	10,000			
Other		12,300	32,700			
Total		43,000	92,000			
Western Prairie Region						
St. Mary-Milk River Project	1901	296,100	510,000	St. Mary Reservoir Chin Jensen Ridge Verdigris Waterton Lake McGregor Travers Little Bow Chestermere Lake Newell Rock Lake Crawling Valley Keho Berry Creek Reservoir Ardley Reservoir Buffalo Lake Craig & Hamilton	270,000 50,000 14,000 80,000 - - 150,000 100,000 12,000 3,000 90,000 11,000 - 40,000 30,000 - -	270,000 150,000 14,000 80,000 110,000 130,000 250,000 100,000 12,000 3,000 100,000 11,000 120,000 40,000 30,000 300,000 300,000 250,000
Bow River Irr. Project	1918	100,000	240,000			
Western Irr. District	1908	50,000	50,000			
Eastern Irr. District	1914	200,000	280,000			
Lethbridge Northern Irr. Dist.	1922	75,000	96,000			
Berry Creek Project	1938	3,000	8,000			
Red Deer Irr. Project	-	-	300,000			
Other		52,000	201,000			
Total		776,100	1,685,000			

Project	Year Started	Irrigable Acreage		Major Reservoirs	(Live Storage (Acre Feet))	
		Present	Ultimate Proposals		Present	Ultimate
Central Prairie Region						
French Flats = Valley Park	1949	700	6,000	South Sask. Reservoir	-	3,100,000
South Sask. Irr. Project	-	-	470,000	Delisle Reservoir	-	25,000
Red Deer Extension		-	200,000	Blackstrap Reservoir	-	25,000
Other		13,300	14,000	Loverna Reservoir	-	250,000
Total		14,000	690,000			
Cypress Hills Region						
Eastend=Val Marie Irr. Proj.	1937	10,000	13,000	Cypress Lake	100,000	100,000
				Eastend	2,000	2,000
Consul-Vidora Irr. Projects	1945	7,000	10,000	Val Marie Reservoirs	12,000	12,000
Ross Creek Irr.	1949	2,000	3,000	Fifty Mile Reservoir	-	80,000
Maple Creek Irr.	1936	10,000	10,000			
				Gros Ventre	4,500	8,000
Swift Current Irr. Project	1940	12,000	21,000	Downie Lake	10,000	10,000
				Junction	10,000	10,000
				Harris	5,000	5,000
				Duncairn	85,000	85,000
Ponteix Project	1953	1,000	3,000	Highfield	13,000	13,000
Cadillac Project	1953	700	800	Gouverneur	10,000	10,000
				Cadillac	1,500	1,500
Russell Creek Project	1951	900	1,200	Admiral	2,500	2,500
Lafleche Project	-	-	8,000	Russell	2,000	2,000
Other	-	67,300	98,000	Lafleche	30,000	30,000
Total		110,900	168,000			



Project	Started	Irrigable Acreage		(Live Storage (Acre Feet))	
		Present	Ultimate	Present	Ultimate
Eastern Prairie Region					
Lumsden-Fairy Hill Irr.	1910	3,000	6,000	40,000	120,000
Souris-Estevan-Kisbey Irr. Proj.	1937	5,000	11,000	3,000	50,000
South Saskatchewan				9,000	9,000
Extension Qu'Appelle	-	=	24,000		
Other	=	20,000	34,000		
Total		28,000	75,000		
Total Irrigation (Alberta & Saskatchewan)		972,000	2,710,000		

(Live Storage (Acres Feet))

Person

Person

Person

Year

Project

Central Active Region

French Hill Valley Park

South Lake, Inc. Project

Red Deer Extension

Other

Total

Cypress Hill Region

Exterior Vol Marie Inc. Proj

Long (Village) & 20th Avenue

Project in 2000

Project in 2000

Project in 2000

Other

South Extension of 20th Ave

2000 2000 2000

Project in 2000

Project in 2000

Project in 2000

Other

Total

Date Due

2000 2000

Person

Person

Person

Person

Year

Project

(Live Storage (Acres Feet))

Person

Person

Year

Project











[illegible][illegible]



HD 1781 A2 P8222 1957/1958  
CANADA PRAIRIE FARM  
REHABILITATION ADMINISTRATION  
PRAIRIE FARM REHABILITATION  
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